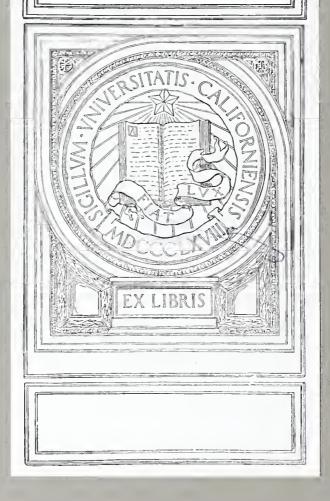


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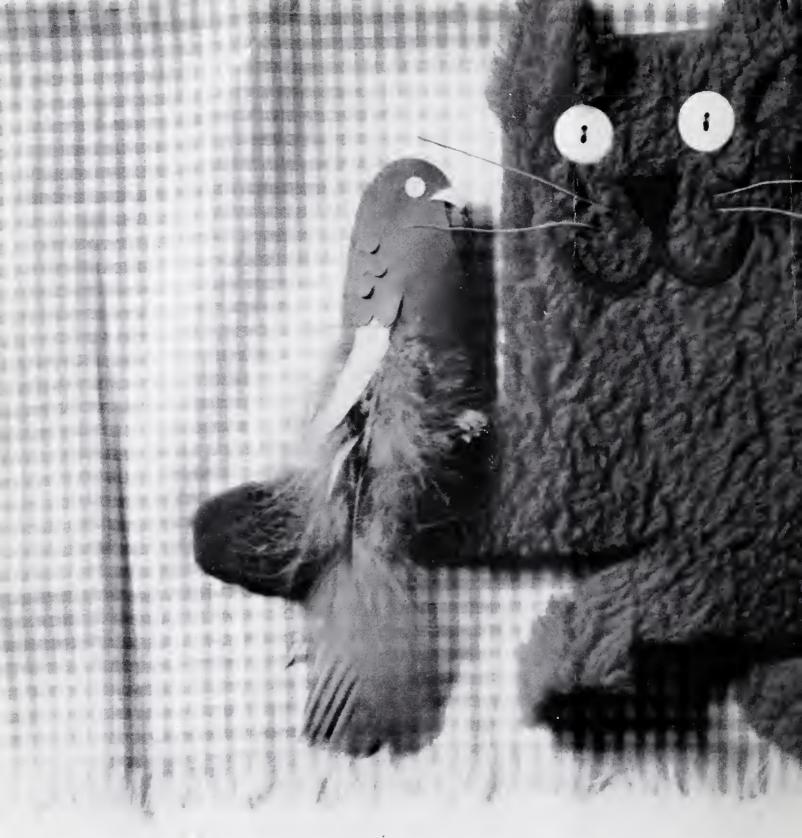


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#### 87th ANNUAL SESSION

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Wilmoth, Marion H.	2nd and Sypert, Nashville, 510

#### INDEPENDENCE COUNTY

Calaway, W. H. Churchill, C. A. Evans, G. C. Evans, L. T. Grasse, A. Meryl Gray, Paul Hathcock, Alfred H. Hinkle, Charles G. Hollister, G. Lloyd Jeffery, Paul H. Johnston, O. J. T. Ketz, W. J. Lytle, Jimmie McAdams, V. D. Monfort, J. J. Monfort, J. J. Monroe, Howard U. Robinette, James M. Slaughter, Bob L. Tatum, Harold M. Taylor, Chaney W. Taylor, Charles A. Walker, A. T. Weathers, James L. Wyatt, Finnis Q.	North Arkansas Clinic, Batesville, RI 3-5251 204 East 6th, Batesville, RI 3-5194 423 East Main, Batesville, RI 3-2540 Batesville Calico Rock, 20 477 East Main, Batesville, RI 3-2211 3771/2 East Main, Batesville, RI 3-2208 Mountain View, CO 9-3236 Bethesda, Batesville, RI 3-2266 608 E. Boswell, Batesville, RI 3-2667 608 E. Boswell, Batesville, RI 3-2817 377 East Main, Batesville, RI 3-2371 North Arkansas Clinic, Batesville, RI 3-5251
	9 2 100111101 111 3 3231

#### JACKSON COUNTY

Ashley, John D., Jr.	Newport Clinic, Newport, JA 3-3661
Baird, H. M.	609 Virginia Circle, Forrest City, ME 3-5943
Harris, M. Haymond	3rd and Hazel Streets, Newport, JA 3-5871
Jackson, Jabez F	3rd and Hazel Streets, Newport, JA 3-5871
	Tuckerman, 349-2250
	1513 Malcolm, Newport, JA 3-3321
Williams, Thomas E.	2nd and Laurel Streets, Newport, JA 3-3661
Wright, John C	3rd and Hazel Streets. Newport. JA 3-5871

#### JEFFERSON COUNTY

Anderson, Charles W.	11081/2 Poplar, Pine Bluff, JE 4-865
Atnip, Gwyn	1409 Cherry, Pine Bluff JE 5-355
Barksdale, Barbara A.	Rison, FA 5-622
Bruce, W. H	1400 Linden, Pine Bluff, JE 4-0244
Bryant, R. Frank	1112 Linden, Pine Bluff, JE 4-4352
Burford, Thomas G.	106 Pennsylvania, Pine Bluff, NI
Burroughs, Clement D	11081/2 Poplar, Pine Bluff, JE 4-865
Causey, Hunter A	1310 Cherry, Pine Bluff, JE 4-6210
Clark, O. W	4001 Cherry, Pine Bluff, JE 4-076
Crane, H. A., Jr	1107 Cherry, Pine Bluff, JE 5-083.
Cunningham, T. J., Jr.	300 West 6th, Pine Bluff, JE 4-472.
Dickins, Robert D	1003 Cherry, Pine Bluff, JE 4-814
Fowler, Arthur, Jr	917 Cherry, Pine Bluff, NI

Glasscoci, R. E. Hart, J. Clyde, Jr. Hundley, Louis K. Hutchison, E. L. Hyman, Carl E. Irwin, Raymond A. James, William Joe Lawlah, Clyde A. Luck, Benjamin D., Jr. McCain, B. E. McDonald, Robert L. Maynard, Ross E. Meredith, William R. Monroe, S. C. Morris, Harold J. Nixon, William R. Payne, Virgil L. Perry, Virgil B. Pierce, J. R., Jr. Pollard, A. E. Raney, Ol'ver C. Reed, E. Frank Jr. Reed, Ulysses S. Reid, Charles W. Rhyne, James T. Rice, James B. Robinette, Joseph S. Russell, Allen R. Searcy, James B. Simmons, Calvin R. Spillyards, J. S. Stern, Howard S. Sullenberger, A. G. Talbot, George B. Tracy, Charles C. Walker, John K. Wilkins, Walter J., Jr. Wineland, H. L.	709 West 6th, Pine Bluff, JE 4-0413 1310 Cherry, Pine Bluff, JE 4-8210 1008 West 11th, Pine Bluff, JE 4-8363 National Building, Pine Bluff, JE 5-1562 Masonic Temple, Pine Bluff, JE 5-200 1202 Cherry, Pine Bluff, JE 5-200 3291/2 Main, Pine Bluff, JE 5-5400 3291/2 Main, Pine Bluff, JE 5-5400 3291/2 Main, Pine Bluff, JE 4-1912 1301 West 35th, Pine Bluff, JE 4-1912 1301 West 35th, Pine Bluff, JE 4-8651 National Building, Pine Bluff, JE 4-8651 National Building, Pine Bluff, JE 4-8651 1421 Cherry, Pine Bluff, JE 4-8651 1421 Cherry, Pine Bluff, JE 4-0413 802 West 5th, Pine Bluff, JE 4-0413 802 West 5th, Pine Bluff, JE 5-4141 1202 Cherry, Pine Bluff, JE 5-4141 1202 Cherry, Pine Bluff, JE 5-3443 1125 Cherry, Pine Bluff, JE 5-3212 1021 Cherry, Pine Bluff, JE 5-5522 1021 Cherry, Pine Bluff, JE 5-5522 1115 Cherry, Pine Bluff, JE 5-522 1115 Cherry, Pine Bluff, JE 5-2200 11002 West 14th, Pine Bluff, JE 5-2252 1115 Cherry, Pine Bluff, JE 5-2252 11021 Linden, Pine Bluff, JE 5-2252 1115 Cherry, Pine Bluff, JE 5-2200 1107 Cherry, Pine Bluff, JE 5-2200 1310 Cherry, Pine Bluff, JE 4-4407 1421 Cherry, Pine Bluff, JE 5-2200 1310 Cherry, Pine Bluff, JE 5-2200
Walker, John K.	1107 Cherry, Pine Bluff, JE 5-0831
Wilkins, Walter J., Jr.	1421 Cherry, Pine Bluff, JE 5-2200
Wirthlin, Milton R.	405 West 2nd, Pine Bluff, JE 4-3561
Wooley, Ralph R.	1127 Cherry, Pine Bluff, JE 4-8574
101	INICON COUNTY

#### JOHNSON COUNTY

Callaway, James R.	P. O. Box 472, Clarksville, Pt 4-2007
Hardgrave, George L.	Morgan Building, Clarksville, PL 4-2711
Kolb, James M., Jr.	4301 West Markham, Little Rock, MO 6-9461
Kolb, James M., Sr.	P. O. Box 472, Clarksville, PL 4-2007
Manley, Robert H.	307 East Main, Clarksville, PL 4-3B20
Scarborough, W. R.	109 West Fulton, Clarksville, PL 4-2512
Shrigley, Guy P.	416 Sevier, Clarksville, PL 4-2043
Siegel, G. Reginald	Clarksville

#### LAFAYETTE COUNTY

Beaty, W. R.	119 Spruce, Lewisville, WA 1-435
Cross, Charles	317 Main, Stamps, LE 3-456
Harrison, R. H.	4301 West Markham, Little Rock, MO 6-946
Hunter, Robert W.	P. O. Box 458, Lewisville, WA 1-4227
Lee, Willie J.	Box 276, Stamps, LE 3-446

#### LAWRENCE COUNTY

Cruse, E. J.	Black Rock, TR 8-6209
Elders, J. B.	321 S. W. 3rd, Walnut Ridge, TU 4-3162
Glenn, Wayne B.	4301 West Markham, Little Rock, MO 6-9461
Gregory, Lloyd F.	
Hickman, James H.	. Walnut Ridge, TU 4-4222
Joseph, Ralph	V. A. Hospital, Little Rock, FR 4-3331
Whittington, J. J., I	II Walnut Ridge, TU 4-3552

#### LEE COUNTY

Dozier, Floyd S.	29 North Poplar, Marianna, CY 4-2107
Gray, Dwight W.	110 West Chestnut, Marianna, CY 4-3131
Hays, William C., Jr.	90 West Main, Marianna, CY 4-2323
McLendon, Mac	29 West Columbia, Marianna, CY 4-2711
Nowell, E. C.	Route 3, Box 22A, Marianna, CY 4-2616

#### LINCOLN COUNTY

Dixon, Charles W.	Gould, CO 3-4416
Freeland, James W.	Star City, MA 8-4226
Petty, Richard C.	Star City. MA B-4292

#### LITTLE RIVER COUNTY

Armstrong, James D.	Ashdown, TW 8-3306
Peacock, N. W., Jr.	Ashdown, TW 8-3306
Shelton Joseph G Jr	Ashdown TW 8-330A

#### LOGAN COUNTY

Center, W. B.	State Sanatorium, OR 5-2121
Facundus, Bruce E.	210 Ellsworth, Booneville, OR 5-2300
Jones, W. Duane	State Sanatorium, OR 5-2121
Loveless, Donald E.	121 East 3rd, Booneville, OR 5-2101
McConnell, Samuel P.	113 West Main, Booneville, OR 5-3232
Parker, B. G.	121 East 3rd, Booneville, OR 5-2101
Redman, John W.	.1504 South Elm, Paris, YO 3-2589
Riley, J. D.	State Sanatorium, OR 5-2121
Smith, Charles McD.	Paris, YO 3-2780
Smith, James T.	Paris, YO 3-3221

#### LONOKE COUNTY

oper, Edward J.	520 Northeast 4th, England, VI 2-4411
irtman, J. F.	Court Street, Carlisle, LU 2-2596
lmes. B. E.	305 West Front, Lonoke, OR 6-6560

McEntire, H. E.	.4814 Lynn Lane, North Little Rock, SK 3-1116
Martin, J. A.	Box B6, Cabot, BA 4-90B6
Parker, William M.	
Washburn, C. Yulan	III West Main, Cabot, BA 4-2141

#### MILLER COUNTY

#### MISSISSIPPI COUNTY

Beasley, Joe E Brownson, J. F	515 North 6th, Blytheville, PO 3-4575 North 10th Street, Blytheville, PO 3-7064 Tucson, Arizona Walnut Ridge
*Case, James W	
Fairley, Julian	616 West Lee, Osceola, LO 3-2686 519 North 6th, Blytheville, PO 3-4564 527 North 6th, Blytheville, PO 3-8118 903 Chickasawba, Blytheville, PO 3-6802
Hard, John W Holcomb, C. E Hubener, L. L Hubener, Louis F	201 East Main, Blytheville, PO 2-2021 Gainesville, Florida
Johnson, I. R. Johnson, R. L. Lawrence, Jesse A. Massey, Lorenzo D. Osborne, Merrill J	= .1915 West Main, Blytheville, PO 3-4526 Adams Street, Wilson, 2411
Payne, Troy Polk, J. T. Pollock, George D. Rainwater, W. T. Rhodes, R. F.	519 North 6th, Blytheville, PO 3-4564 Keiser, 526-2121 60 West Lee, Osceola, LO 3-2608
Rhodes, R. F Rodman, T. N Shaneyfelt, E. A Sims, Hunter, Jr Sims, Hunter, Sr	Box 260, Leachville, 539-633/
Taylor, G. Wayne Utley, F. E Walis, James M	P. O. Box 746, Leachville, 539-6337 515 North 6th, Blytheville, PO 3-4575 1204 Hearn, Blytheville, PO 3-6082 Jack). 520 W. Main, Blytheville, PO 2-2131 527 North 6th, Blytheville, PO 3-8118

#### MONROE COUNTY

Dalton, M. L
David, N. C., Jr
McKnight, Edward D Bank of Brinkley Bldg., Brinkley, RE 4-4234
Pupsta, Benedict F Clarendon, 747-3321
Stone, Herd E., Jr Holly Grove, 2271
Walker, Walter L 114 South New Orleans, Brinkley, RE 4-3242
Williams, J. P., Jr.,

#### NEVADA COUNTY

Avery, Charles D = .=	Prescott, BB7-2625
Cox, James E	Prescott, BB7-3010
	Prescott, BB7-2211
	Prescott, BB7-2312
	Prescott, BB7-2012
Hesterly, Jacob B	Prescott, BB7-2012
Pool William B. H.	Bodcaw TW 9-2236

#### OUACHITA COUNTY

#### PHILLIPS COUNTY

Barrow, John H Bell, L. J. Pat Berger, A. A. Biggs, William W. Butts, James W Capes, Bernard Chrestman, R. L., Jr. Connolly, William B. Ellis, William A., Jr. Faulkner, Henry N. Hiatt, Wood C. Jones, Lynwood B. Kirkman, C. M. T. Kurts, Evan J McCarty, C. P Oldham, H. B. Paine, W. T. Tonymon, Daniel	Oakland Avenue, Helena, HI 4-2622
Tonymon, Daniel Wise, James E., Jr.	

#### POLK COUNTY

Austin, Calvin D	606 Mena, Mena, EX 4-1441
Hefner, David P	600 West 7th, Mena, EX 4-3344 513 Mena, Mena, EX 4-2277
Rogers, Henry N.	.600 West 7th, Mena, EX 4-3344
Wood, John P.	 907 Mena, Mena, EX 4-4221

#### POPE-YELL COUNTY

Lowrey, Douglas H. Luker, Jerome Martin, Damon G. H. Millard, Roy I. Mobley, Max James McNamara, William L. Pennington, James O. Ring, Gene D. Robinson, Tom D. Teeter, Brooks R. Webb, Lewis A. Wilkins, Charles F.	
Williams, David M	B09 West Main, Russellville, WO 7-2156

#### PULASKI COUNTY

Abbott, William Wood. 409 Shamrock, Little Rock, MO 6-2471
Abergrombie   Scott Houston Texas
Aberrathy, Robert S 4301 W. Markham, Little Rock, MO 6-9461
Abraham, James H. 900 North University, Little Rock, MO 4-39SI
Adametz, J. H Donaghey Building, Little Rock, FR S-5547
Allen, Hoyt R Donaghey Building, Little Rock, FR 2-551B
Armstrong, Howard M 12th and Bishop, Little Rock, FR 2-5626
Atkinson, Shelby 3833 Lockridge, North Little Rock, SK 3-4262
Ault, C. C V. A. Hospital, North Little Rock, FR 2-B361
Aut C. C
Autry, Daniel H Medical Arts Bldg., Little Rock, FR 6-1313
Baber, John C., Jr Donaghey Building, Little Rock, FR 5-1268
Bailey, H. A. Ted, Jr
Barnhard, Fay M4301 West Markham, Little Rock, MO 6-9461
Barnhard, Howard J 4301 West Markham, Little Rock, MO 6-9461
Barriard, Howard S. 1930) West Wilder Little Back EP 5065
Bauer, Frank M
Bearden, James R Baptist Hospital, Little Rock, FR 4-3351
Becquet, N. J
Bennett B. A. BO9 North Arthur, Little Rock, MO 4-2964
Berry, Frederick B
Berry Margar C 7001 West Markham 1 this Rock MO 4 0820
Berry, Morgan C7001 West Markham, Little Rock, MO 6-0820
Betts, Charles S 5700-A West Markham, Little Rock, MO 3-9169
Beverly, Nolan F St. Vincent Infirmary, Little Rock, MO 6-5421
Bizzell, Ross Exchange Building, Little Rock, FR 6-2309
Black, Hal R., Jr Donaghey Building, Little Rock, FR 2-7265
Black, Millard W 705 North Ash, Little Rock, MO 3-5413
black, Millard VV 705 North Asii, Little Rock, MO 3-5413

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Blakely, R. M.
Bradburn, Curry B.
Brigags, B. P.
Brigags, B. P.
Brigags, B. P.
Brigags, B. P.
Brizelara, A.J.
Brizelara, A.J.
Brizelara, A.J.
Brown, T. Deel
Brown, Martha M.
Brown, T. Deel
Brown, Willis E.
Brown, Joseph A.
Burchanan, Joseph A.
Burchan, Joseph A.
Burchan,
```

Henry, Marion J.
Henry, Robert L.
Herron, John T.
Hickey, Joseph T.
Holmes, Harlan C.
Holl, L. G.
Holl, L. G.
Holl, L. G.
Holl, L. G.
Horror, John M.
Hort, David T.
John M.
Hyart, David T.
John M.
Hyart, David T.
Johnson, James A.
Johnson, James A.
Johnson, James A.
Johnson, James A.
Johnson, Henry D.
Johnson, Henry D.
Johnson, James A.
Johnson, Henry D.
Johnson, Henry

Pringos, Andrew A. Nat'l Old Line Bldg., Little Rock, FR 5-3231	DeClerk, T. B.
Proctor, Clark B. V.A. Hospital, North Little Rock, FR 2-8361	Hamil, W. E. Scott, William W.
Raney, T. J	Smith, Norman K.
Reagan, Luther D. Donaghey Suilding, Little Rock, FR 4-1702	
Reagan, W. Paul . State Health Building, Little Rock, FR 4-6361 Reed, Ewing C., Jr	
Reese, William G 4301 West Markham, Little Rock, MO 6-9461	Ashby, John W
Regnier George G. Donaghey Building Little Rock FR 6-1814	Baber, Quin M Blakely, M. M
Rhinehart, Barton A. Donaghey Building, Little Rock, FR 4-3194 Rhinehart, William J. Donaghey Building, Little Rock, FR 6-1814	Buffington, T. E.
Richardson, Robert E1120 Marshall, Little Rock, FR 5-3224	Flora, Wayne W.
Richardson, Robert E	Hogue, F. Paul Hood, Robert H.
Riegler, Henry C., Jr., Chester & W. 6th Sts., Little Rock, FR 2-1885 Riegler, Nicholas W. Jr., 1024 Scott, Little Rock, FR 5-3326	Jones, Curtis W., Jr.
Riegler, Nicholas W., Jr1024 Scott, Little Rock, FR 5-3326 Riegler, Nicholas W., Sr1024 Scott, Little Rock, FR 5-3326	Jones, Curtis W., Sr.
Riegler, Vea J Chester & W. 6th Sts., Little Rock, FR 2-1885	Martindale, J. L. Reynolds, M. Wayne
Riggin, John T	Thorn, H. B., Jr.
*Riley, William K. North Little Rock Ritchie, E. J. 1401 Main, North Little Rock, FR 2-5253	Walton, Charles R.
Ritchie, E. J	Wright, John D
Robinson, J. M	
Rosenbaum, Carl A. Donaghey Building, Little Rock, FR 2-5101	Brown, E. J
Ross, Robert W 4316 West Markham, Little Rock, MO 3-3121	Jenkins, James A. –
Ross, S. William 900 North University, Little Rock, MO 4-3951 Rothert, Frances C	Wright, Harold B.
Samuel, John M 805 West 4th, Little Rock, FR 5-6468 Sanderlin, Joseph H. Donaghey Building, Little Rock, FR 5-7228	
Schneider, Mildred F. V A. Hospital, North Little Rock, FR 2-8361	Hall, H. J.
Schratz, Bruce E 3423 Pike Ave., North Little Rock, SK 3-6616	Hall, J. A Williams, John H.
Schwander, Howard 1115 Bishop, Little Rock, FR 5-2366	**
Schwarz, W. J Donaghey Building, Little Rock, FR 4-4712 Scruggs, Joe B., Jr Baptist Hospital, Little Rock, FR 4-3351	
Selakovich, Walter G. 5700 W. Markham, Little Rock, MO 6-2824	Adams, W. F
Sessoms, William D. 1120 Marshall, Little Rock, FR 2-7502 Shafer, Cecil W. Louisville, Kentucky	Allen, George W., Amis, J. W.
Shafer, Cecil W Louisville, Kentucky Shannon, Robert F 4301 West Markham, Little Rock, MO 6-9461	8ailey, Charles W
Shaw, E. I State Hospital, Little Rock, MQ 6-0181	8arta, Lloyd L
Shipp, Harvey D	Bost, Roger B
Shuffield, H. Elvin, (Sec'y) Donaghey Bldg., Little Rock, FR 5-2446	Brooksher, W. R
Shuffield, Joe F Donaghey Building, Little Rock, FR 5-2446	8rown, 8yron L Chamberlain, C. T
Simmons, Nolan L	Chamberlain, C. T Chamblin, Don W
Sinton, David 4301 West Markham, Little Rock, MO 6-9461	Christie, L. G., Jr
Sloan, James M. 5322 West Markham, Little Rock, MO 4-3814	Cottman, Edwin L
Smith, Huie H	Crigler, Ralph E Crow, Neil E
Smith, John McC. 4000 Woodlawn, Little Rock, MO 6-6570	Darnall Harley C.
Smith, John W1415 West 6th, Little Rock, FR 4-1622 Smith, Mose, 111 . 5600 West Markham, Little Rock, MO 3-6313	Downs, Ralph A. Faier, S. Z.
Smith, Purcell, Jr. 4001 West Capitol, Little Rock, MO 4-1596	Floyd, Charles H.
Smith, W. Myers . 3421 A Pike St., North Little Rock, SK 3-3661	Foltz. Thomas P
Snodgrass, W. A., Jr. Donaghey Building, Little Rock, FR 4-2326 Spitzberg, I. J. Donaghey Building, Little Rock, FR 2-3670	Foster, M. E
Springer, Worthie R., Jr. 103 E. 2nd, North Little Rock, FR 4-2635	Glenn, Clarence L
Stainton, Robert M Donaghey Building, Little Rock, FR 5-0175 Stanley, Joe PatPike Plaza Shpg. Ctr., No. Little Rock, FR 4-4071	Goldstein, D. W. Goodman, R. C., Sr.
Stathakis John Veterans Admin North Little Rock FR 2-8361	Hall, Charles W
Steele, W. L	Hawkins, Wright
Stewart, Bill Dave 415 North University, Little Rock, MO 4-1521 Stotts, John R 5905 ''R'' Street, Little Rock, MO 3-6958	Heffington, Claud S. Henry, Lewis M.
	Henry, Louise M. Hewett, Archie L.
Strauss, Alvin W., Jr. Waldon Building, Little Rock, FR 2-1828	
Stroope, George F 4117 Ark-Mo Hwy., No. Little Rock, SK 3-3487 Stuckey, James G Donaghey Building, Little Rock, FR 5-5653	Hoge, Arthur F., Jr Hoge, Marlin B
Sundermann, Richard H. 4301 W. Markham, Little Rock, MO 6-9461	Hornberger, E. Z
Taylor, James S 4301 West Markham, Little Rock, MO 6-9461 Thomas Peter O	Hudson, John L Keck, H. M
Thomas, Peter O. Thomas, Philip E. Thompson, Ewell I. Donaghey Building, Little Rock, FR 2-7732 Donaghey Building, Little Rock, FR 2-2089	
Thompson, Ewell I. Donaghey Building, Little Rock, FR 2-2089	Kelsey, J. F. Kennedy, V. N
Thompson, Lawrence L	Kirkpatrick, Hoyt, Jr Knight, W. E.
Thorn, Garland Max 4117 Ark-Mo Hwy., N. Little Rock, SK 3-3487	Koenig, A. S. Kramer, Ralph G.
Tolbert, Louis E., Jr Donaghey Building, Little Rock, FR 5-0520 Toombs, Vernon L	Kramer, Ralph G. Krock, F. H.
Valentine, Robert G. 875 Tower Building, Little Rock, FR 4-9568	Lambiotte, Louis O
Wallace, Deane D Donaghey Suilding, Little Rock, FR 5-6478	Lane, Charles S., Jr.
Wallis, Charles D	Ling, P. C. Lockhart, William G.
Ward, Joseph P	Lockwood, Franklin M
Warden, J. R. Donaghey Building, Little Rock, FR 4-4063 Warford, Walton R. V.A. Hospital, North Little Rock, FR 2-8361	McCraney, H. C.
Washburn, A. M 605 North Spruce, Little Rock, MO 3-5832	McDonald, H. P McEwen, Stanley R.
Wassell, John R. 5305 Kavanaugh, Little Rock, MO 4-1525	McMinimy, Donald J.
Watkins, Charles J Donaghey Building, Little Rock, FR 6-1003 Watkins, John G., Jr. Donaghey Building, Little Rock, FR 2-7026	Martin, Art 8 Mason, Joe
Watson, C. Fletcher Donaghey Building, Little Rock, FR 2-7513	Mason, Roy .
Watson, Robert Donaghey Building, Little Rock, FR 5-5547	Meador, Don M
Weber, James R 1110 West Main, Jacksonville, YU 2-2108	Mendelsohn, Ernest A Moulton, E. C., Jr.
Wells, Travis L Donaghey Building, Little Rock, FR 5-7121	Olson, John D
Wenger, Carl E	Patton, Gerald K. Pence Eldon D.
*Weny, N. F. North Little Rock White, Oba B. Century Building, Little Rock, FR 4-3609	Pence, Eldon D. Post, James M.
Whitehead, R. H., Jr. 6701 Hinkson Road, Little Rock, LO 5-5413	ReMine, Phillip Gord
*Wickard, Charles P. Little Rock Wilbur, E. Lloyd Baptist Hosoital Little Rock, FR 4-3351	Rogers, Paul L Saviers, Boyd M
Wilkes, Elbert H 5322 West Markham, Little Rock, MO 3-4114	Schirmer Roy E.
Wilson, James D	Scott, M. H. Shearer, F. E.
Wortham, Thomas H 1000 West Main Jacksonville, YU 2-2141 Young, William O 1121/2 East 7th Little Rock FR 4-8656	Siliculot, I. E
772/7 Edst 711 El tie Rock 1 R 1 0030	Sherman, Robert L.
Zell, Lawrence M Donaghey Building, Little Rock, FR 4-5158	Sherman, Robert L. Shermer, J. P
Zell, Lawrence M Donaghey Building, Little Rock, FR 4-5158  RANDOLPH COUNTY	Sherman, Robert L. Shermer, J. P Shippey, W. L Sims, Henry M
Zell, Lawrence M Donaghey Building, Little Rock, FR 4-5158  RANDOLPH COUNTY	Sherman, Robert L. Shermer, J. P Shippey, W. L Sims, Henry M Snider, James R.
Zell, Lawrence M Donaghey Building, Little Rock, FR 4-5158	Sherman, Robert L. Shermer, J. P Shippey, W. L Sims, Henry M

204 Craft, Pocahontas, TW 2-3344 ..... Pocahontas, TW 2-5815 309 West Broadway, Pocahontas, TW 2-3371 ...108 Van Bibber, Pocahontas, TW 2-3389

#### SALINE COUNTY

NE COUNTY

... 302 West South, Benton, SP 8-4511
212 West Sevier, Benton, SP 8-3488
319 West South, Benton, SP 8-2906
Buffington Building, Benton, SP 8-2906
... 80x 123, Alexander
302 West South, Benton, SP 8-4511
State Hospital, Benton, SP 8-2572
221 South Market, Benton, SP 8-2722
221 South Market, Benton, SP 8-2722
221 South Market, Benton, SP 8-2738
... 323 Short, Benton, SP 8-3382
... 302 West South, Benton, SP 8-4511
... Montgomery, Alabama
321 Short, Benton, SP 8-4341

#### SCOTT COUNTY

.....Mansfield, 22 .Waldron, ME 7-6781 Waldron, ME 7-6311

#### SEARCY COUNTY

Clinton, PI 5-2122 Clinton, PI 5-2111 Marsħall, 448-2454

#### SEBASTIAN COUNTY

Adams, W. F	LOO South L4th	Fort Smith, SU 3-1183
Allen Ceerse \4/	220 North Greenwood	Fort Smith Stt 2 3001
Allen, George W.	320 North Greenwood, 602 Garrison,	F1 C14 CH 2 00/0
8ailey, Charles W.	922 Lexington, 1400 South D, 100 South 14th, 318 North Greenwood, 300 North Greenwood,	428, Greenwood, 4171
8arta, Lloyd L		Fort Smith, SU 5-144/
Bost, Roger B	1400 South D,	Fort Smith, SU 3-0211
8oulden Cecil F., Jr.		Fort Smith, SU 3-1183
Brooksher W. R.	318 North Greenwood.	Fort Smith, SU 3-4803
Srown Syron I	300 North Greenwood	Fort Smith SU 3-0225
Chamberlain C T		Fort Smith SII 2-4092
Chambertain, C. T		Fort Smith SII 2 4002
Champiin, Don W	1500 Dodson,	FOIT 3111111, 30 2-4072
Christie, L. G., Jr. Coffman, Edwin L.	11/500 0 11 111	Richmond, Virginia
Cottman, Edwin L	.= 1500 Dodson,	Fort Smith, SU 2-4092
Crigler, Ralph E	1500 Dodson,	Fort Smith, SU 2-4092 Fort Smith, SU 2-4092
Crow Neil F	1500 Dadson	Fort Smith, SU 2-4092
Darnall, Harley C. Downs, Ralph A.	500 Lexinaton.	Fort Smith, SU 2-8667 Fort Smith, SU 3-3146
Downs Ralph A	522 South 16th	Fort Smith SU 3-3146
Faier C 7	1500 Dodson	Fort Smith SII 2-4092
Faier, S. Z. Floyd, Charles H.	919 Lovington	Fort Smith, SU 2-4092 Fort Smith, SU 3-3166
Floyd, Charles In	old Lexingion,	For 1 Co. 11 CH 2 4051
Foltz, Thomas P	500 Lexington,	Fort Smith, SU 2-4051
Foster, M. E	100 South 14th,	Fort Smith, SU 3-1183
*Gardner, James D		Fort Smith
Glenn, Clarence L Goldstein, D. W	1500 Dodson,	Fort Smith, SU 2-4092 Fort Smith, SU 3-1183
Goldstein D. W.	100 South 14th.	Fort Smith, SU 3-1183
Goodman, R. C., Sr. Hall, Charles W.	1500 Dodson	Fort Smith, SU 2-4092
Hall Charles W	Main Str	eet, Greenwood, 2421
Hambine Weight	100 South 14th	Fort Smith, SU 3-1183
Hawkins, Wright	100 300111 14111,	F1 C14 CH 2 4002
Heffington, Claud S.	ISOU Dodson,	Fort Smith, SU 2-4092
Henry, Lewis M	602 Garrison,	Fort Smith, SU 2-7261
Henry, Louise M.		
Hewett, Archie L		Fort Smith, SU 3-3146
Hoge, Arthur F., Jr.	314 North Greenwood.	Fort Smith, SU 2-4066
Hoge Marlin B	314 North Greenwood	Fort Smith SU 2-4066
Hornberger F 7	500 Lexinaton	Fort Smith SII 3-3159
Hudson John I	EQ Phoenix Village	Fort Smith MI 4-1971
V! U M	314 North Greenwood, 500 Lexington, 59 Phoenix Village, 1605 Dodson, 500 Lexington,	Fast Smith SH 2 1200
Keck, H. M	1605 Dodson,	Fort Smith, 50 3-1300
Kelsey, J. F	500 Lexington,	Fort Smith, SU 5-2411
Kelsey, J. F. Kennedy, V. N.		Gladewater, Texas
Kirkpatrick, Hoyt, Jr. Knight, W. E. Koenig, A. S.	1500 Dodson,	Fort Smith, SU 2-4092
Knight, W. E	1500 Dodson.	Fort Smith, SU 2-4092
Koenia, A. S.	922 Lexington,	Fort Smith, SU 5-1447
Koenig, A. S. Kramer_Ralph G.	603 Lexington	
Transpir transpir at		Fort Smith, SU 3-8917
Krock F H	1500 Dodson	Fort Smith, SU 3-8917
Krock, F. H	1500 Dodson,	Fort Smith, SU 3-8917 Fort Smith, SU 2-4092
Krock, F. H	1500 Dodson, 1500 Dodson,	Fort Smith, SU 3-8917 Fort Smith, SU 2-4092 Fort Smith, SU 2-4092
Krock, F. H	1500 Dodson, 1500 Dodson, 1214 North B,	Fort Smith, SU 3-8917 Fort Smith, SU 2-4092 Fort Smith, SU 2-4092 Fort Smith, SU 2-6019
Krock, F. H	1500 Dodson, 1500 Dodson, 1214 North B,	Fort Smith, SU 3-8917 Fort Smith, SU 2-4092 Fort Smith, SU 2-4092 Fort Smith, SU 2-6019
Krock, F. H. Lambiotte, Louis O. Lane, Charles S., Jr. Ling, P. C. Lockhart, William G.	1500 Dodson, 1500 Dodson, 1214 North B, .St. Edwards Hospital, .IS00 Dodson.	Fort Smith, SU 3-8917 Fort Smith, SU 2-4092 Fort Smith, SU 2-4092 Fort Smith, SU 2-6019 Fort Smith, SU 2-3071 Fort Smith, SU 2-4092
Krock, F. H. Lambiotte, Louis O. Lane, Charles S., Jr. Ling, P. C. Lockhart, William G. Lockwood, Franklin M	I500 Dodson, I500 Dodson, IS00 Dodson, IS00 Dodson, I500 Dodson, I500 Dodson,	Fort Smith, SU 3-8917 Fort Smith, SU 2-4092 Fort Smith, SU 2-4092 Fort Smith, SU 2-6019 Fort Smith, SU 2-3071 Fort Smith, SU 2-4092 Fort Smith, SU 2-4092
Krock, F. H. Lambiotte, Louis O. Lane, Charles S., Jr. Ling, P. C. Lockhart, William G. Lockwood, Franklin M	ISOO Dodson, 1500 Dodson, 1214 North B, St. Edwards Hospital, 1500 Dodson, 1500 Dodson, 217 Lexington.	Fort Smith, SU 2-4092 Fort Smith, SU 2-4092 Fort Smith, SU 2-4019 Fort Smith, SU 2-6019 Fort Smith, SU 2-3071 Fort Smith, SU 2-4092 Fort Smith, SU 2-4092 Fort Smith, SU 3-0297
Krock, F. H. Lambiotte, Louis O. Lane, Charles S., Jr. Ling, P. C. Lockhart, William G. Lockwood, Franklin M	1500 Dodson,   1500 Dodson,   1214 North B,   St. Edwards Hospital,   1500 Dodson,   1500 Dodson,   217 Lexington,   822½ North 9th,	Fort Smith, SU 3-8917 Fort Smith, SU 2-4092 Fort Smith, SU 2-4092 Fort Smith, SU 2-6019 Fort Smith, SU 2-3071 Fort Smith, SU 2-4092 Fort Smith, SU 2-4092 Fort Smith, SU 3-0297 Fort Smith, SU 3-0297 Fort Smith, SU 3-2483
Krock, F. H. Lambiotte, Louis O. Lane, Charles S., Jr. Ling, P. C. Lockhart, William G. Lockwood, Franklin M McCraney, H. C. McDonald, H. P.	1500 Dodson,   1500 Dodson,   1214 North B,   St. Edwards Hospital,   1500 Dodson,   1500 Dodson,   217 Lexington,   822½ North 9th,	Fort Smith, SU 3-8917 Fort Smith, SU 2-4092 Fort Smith, SU 2-4092 Fort Smith, SU 2-6019 Fort Smith, SU 2-3071 Fort Smith, SU 2-4092 Fort Smith, SU 2-4092 Fort Smith, SU 3-0297 Fort Smith, SU 3-0297 Fort Smith, SU 3-2483
Krock, F. H. Lambiotte, Louis O. Lane, Charles S., Jr. Ling, P. C. Lockhart, William G. Lockwood, Franklin M McCraney, H. C. McDonald, H. P. McEwen, Stanley R.	1500 Dodson,   1500 Dodson,   1214 North B,   St. Edwards Hospital,   1500 Dodson,   1500 Dodson,   217 Lexington,   822½ North 9th,	Fort Smith, SU 3-8917 Fort Smith, SU 2-4092 Fort Smith, SU 2-4092 Fort Smith, SU 2-6019 Fort Smith, SU 2-3071 Fort Smith, SU 2-4092 Fort Smith, SU 2-4092 Fort Smith, SU 3-0297 Fort Smith, SU 3-0297 Fort Smith, SU 3-2483
Krock, F. H. Lambiotte, Louis O. Lane, Charles S., Jr. Ling, P. C. Lockhart, William G. Lockwood, Franklin M McCraney, H. C. McDonald, H. P. McEwen, Stanley R. McMinimy, Donald J.	1500 Dodson,   1500 Dodson,   1214 North B,   St. Edwards Hospital,   1500 Dodson,   1500 Dodson,   217 Lexington,   822½ North 9th,   1214 North B,   1500 Dodson,	Fort Smith, SU 2-4092 Fort Smith, SU 2-4092 Fort Smith, SU 2-4092 Fort Smith, SU 2-6019 Fort Smith, SU 2-4092 Fort Smith, SU 2-4092 Fort Smith, SU 2-4092 Fort Smith, SU 2-4093 Fort Smith, SU 2-4093 Fort Smith, SU 2-6019 Fort Smith, SU 2-4019
Krock, F. H. Lambiotte, Louis O. Lane, Charles S., Jr. Ling, P. C. Lockhart, William G. Lockwood, Franklin M McCraney, H. C. McDonald, H. P. McEwen, Stanley R. McMinimy, Donald J. Martin, Art 8.	1500 Dodson,   1500 Dodson,   1214 North B,   St. Edwards Hospital,   1500 Dodson,   1500 Dodson,   217 Lexington,   822½ North 9th,   1214 North B,   1500 Dodson,	Fort Smith, SU 2-4092 Fort Smith, SU 2-4092 Fort Smith, SU 2-4092 Fort Smith, SU 2-6019 Fort Smith, SU 2-4092 Fort Smith, SU 2-4092 Fort Smith, SU 2-4092 Fort Smith, SU 2-4093 Fort Smith, SU 2-4093 Fort Smith, SU 2-6019 Fort Smith, SU 2-4019
Krock, F. H. Lambiotte, Louis O. Lane, Charles S., Jr. Ling, P. C. Lockhart, William G. Lockwood, Franklin M McCraney, H. C. McDonald, H. P. McEwen, Stanley R. McMinimy, Donald J. Martin, Art 8. Mason, Joe	ISOO Dodson, ISOO Dodson, I214 North B, St. Edwards Hospital, ISOO Dodson, ISOO Dodson, ISOO Dodson, IT Lexington, IT Lexington, IT Lexington, ISOO Dodson, ISOO Dodson, ISOO Dodson, ISOO Dodson, ISOO Dodson, ISOO Dodson,	Fort Smith, SU 2-4092 Fort Smith, SU 2-4092 Fort Smith, SU 2-4092 Fort Smith, SU 2-3071 Fort Smith, SU 2-3071 Fort Smith, SU 2-4092 Fort Smith, SU 2-4092 Fort Smith, SU 2-4093 Fort Smith, SU 2-4093 Fort Smith, SU 2-4019 Fort Smith, SU 2-4092 Fort Smith, SU 2-4092 Fort Smith, SU 2-4092 Fort Smith, SU 2-4092 Fort Smith, SU 2-2713
Krock, F. H. Lambiotte, Louis O. Lane, Charles S., Jr. Ling, P. C. Lockhart, William G. Lockwood, Franklin M McCraney, H. C. McDonald, H. P. McEwen, Stanley R. McMinimy, Donald J. Martin, Art 8. Mason, Joe	1500 Dodson,   1500 Dodson,   1500 Dodson,   1214 North B,   1500 Dodson,   1500 Dodson,   1500 Dodson,   1214 North B,   1500 Dodson,   15	Fort Smith, SU 2-4092 Fort Smith, SU 2-4092 Fort Smith, SU 2-4092 Fort Smith, SU 2-3071 Fort Smith, SU 2-4092 Fort Smith, SU 2-4092 Fort Smith, SU 2-4092 Fort Smith, SU 2-4833 Fort Smith, SU 2-6019 Fort Smith, SU 2-4092 Fort Smith, SU 2-4092 Fort Smith, SU 2-4092 Fort Smith, SU 2-2013 Fort Smith, SU 2-2713 Fort Smith, SU 2-2713 Fort Smith, SU 3-0285
Krock, F. H. Lambiotte, Louis O. Lane, Charles S., Jr. Ling, P. C. Lockhart, William G. Lockwood, Franklin M McCraney, H. C. McDonald, H. P. McEwen, Stanley R. McMinimy, Donald J. Martin, Art 8. Mason, Joe Mason, Roy Meador Don M.	ISOO Dodson, ISOO Dodson, I214 North B, St. Edwards Hospital, ISOO Dodson, I217 Lexington, 822½ North 9th, I214 North B, ISOO Dodson, ISOO Dodson, Sooth Greenwood, 2413 Midland, 3911 North O.	Fort Smith, SU 2-4092 Fort Smith, SU 2-4092 Fort Smith, SU 2-4092 Fort Smith, SU 2-4097 Fort Smith, SU 2-4092 Fort Smith, SU 2-4092 Fort Smith, SU 2-4092 Fort Smith, SU 2-4093 Fort Smith, SU 2-4093 Fort Smith, SU 2-4094 Fort Smith, SU 2-4094 Fort Smith, SU 2-4095 Fort Smith, SU 2-4095 Fort Smith, SU 2-4096 Fort Smith, SU 2-4096 Fort Smith, SU 2-4097 Fort Smith, SU 2-4098 Fort Smith, SU 3-5158
Krock, F. H. Lambiotte, Louis O. Lane, Charles S., Jr. Ling, P. C. Lockhart, William G. Lockwood, Franklin M McCraney, H. C. McDonald, H. P. McEwen, Stanley R. McMinimy, Donald J. Martin, Art 8. Mason, Joe Mason, Roy Meador, Don M.	1500 Dodson,   1500 Dodson,   1500 Dodson,   1214 North B,   1500 Dodson,   1500 Dodson,   1500 Dodson,   1214 North B,   1500 Dodson,   15	Fort Smith, SU 2-4092 Fort Smith, SU 2-4092 Fort Smith, SU 2-4092 Fort Smith, SU 2-3071 Fort Smith, SU 2-4092 Fort Smith, SU 2-4092 Fort Smith, SU 2-4092 Fort Smith, SU 2-4093 Fort Smith, SU 2-4093 Fort Smith, SU 2-4093 Fort Smith, SU 2-4094 Fort Smith, SU 2-4094 Fort Smith, SU 2-4095 Fort Smith, SU 2-4095 Fort Smith, SU 2-2713 Fort Smith, SU 3-0285 Fort Smith, SU 3-5158 Fort Smith, SU 3-5158
Krock, F. H. Lambiotte, Louis O. Lane, Charles S., Jr. Ling, P. C. Lockhart, William G. Lockwood, Franklin M McCraney, H. C. McDonald, H. P. McEwen, Stanley R. McMinimy, Donald J. Martin, Art 8. Mason, Joe Mason, Roy Meador, Don M.	1500 Dodson,   1500 Dodson,   1500 Dodson,   1214 North B,   1500 Dodson,   1500 Dodson,   1500 Dodson,   1214 North B,   1500 Dodson,   15	Fort Smith, SU 2-4092 Fort Smith, SU 2-4092 Fort Smith, SU 2-4092 Fort Smith, SU 2-3071 Fort Smith, SU 2-4092 Fort Smith, SU 2-4092 Fort Smith, SU 2-4092 Fort Smith, SU 2-4093 Fort Smith, SU 2-4093 Fort Smith, SU 2-4093 Fort Smith, SU 2-4094 Fort Smith, SU 2-4094 Fort Smith, SU 2-4095 Fort Smith, SU 2-4095 Fort Smith, SU 2-2713 Fort Smith, SU 3-0285 Fort Smith, SU 3-5158 Fort Smith, SU 3-5158
Krock, F. H. Lambiotte, Louis O. Lane, Charles S., Jr. Ling, P. C. Lockhart, William G. Lockwood, Franklin M McCraney, H. C. McDonald, H. P. McEwen, Stanley R. McMinimy, Donald J. Martin, Art 8. Mason, Joe Mason, Roy Meador, Don M.	1500 Dodson,   1500 Dodson,   1500 Dodson,   1214 North B,   1500 Dodson,   1500 Dodson,   1500 Dodson,   1214 North B,   1500 Dodson,   15	Fort Smith, SU 2-4092 Fort Smith, SU 2-4092 Fort Smith, SU 2-4092 Fort Smith, SU 2-3071 Fort Smith, SU 2-4092 Fort Smith, SU 2-4092 Fort Smith, SU 2-4092 Fort Smith, SU 2-4093 Fort Smith, SU 2-4093 Fort Smith, SU 2-4093 Fort Smith, SU 2-4094 Fort Smith, SU 2-4094 Fort Smith, SU 2-4095 Fort Smith, SU 2-4095 Fort Smith, SU 2-2713 Fort Smith, SU 3-0285 Fort Smith, SU 3-5158 Fort Smith, SU 3-5158
Krock, F. H. Lambiotte, Louis O. Lane, Charles S., Jr. Ling, P. C. Lockhart, William G. Lockwood, Franklin M McCraney, H. C. McDonald, H. P. McEwen, Stanley R. McMinimy, Donald J. Martin, Art 8. Mason, Joe Mason, Roy Meador, Don M.	1500 Dodson,   1500 Dodson,   1500 Dodson,   1214 North B,   1500 Dodson,   1500 Dodson,   1500 Dodson,   1214 North B,   1500 Dodson,   15	Fort Smith, SU 2-4092 Fort Smith, SU 2-4092 Fort Smith, SU 2-4092 Fort Smith, SU 2-3071 Fort Smith, SU 2-4092 Fort Smith, SU 2-4092 Fort Smith, SU 2-4092 Fort Smith, SU 2-4093 Fort Smith, SU 2-4093 Fort Smith, SU 2-4093 Fort Smith, SU 2-4094 Fort Smith, SU 2-4094 Fort Smith, SU 2-4095 Fort Smith, SU 2-4095 Fort Smith, SU 2-2713 Fort Smith, SU 3-0285 Fort Smith, SU 3-5158 Fort Smith, SU 3-5158
Krock, F. H. Lambiotte, Louis O. Lane, Charles S., Jr. Ling, P. C. Lockhart, William G. Lockwood, Franklin M McCraney, H. C. McDonald, H. P. McEwen, Stanley R. McMinimy, Donald J. Martin, Art 8. Mason, Joe Mason, Roy Meador, Don M.	1500 Dodson,   1500 Dodson,   1500 Dodson,   1214 North B,   1500 Dodson,   1500 Dodson,   1500 Dodson,   1214 North B,   1500 Dodson,   15	Fort Smith, SU 2-4092 Fort Smith, SU 2-4092 Fort Smith, SU 2-4092 Fort Smith, SU 2-3071 Fort Smith, SU 2-4092 Fort Smith, SU 2-4092 Fort Smith, SU 2-4092 Fort Smith, SU 2-4093 Fort Smith, SU 2-4093 Fort Smith, SU 2-4093 Fort Smith, SU 2-4094 Fort Smith, SU 2-4094 Fort Smith, SU 2-4095 Fort Smith, SU 2-4095 Fort Smith, SU 2-2713 Fort Smith, SU 3-0285 Fort Smith, SU 3-5158 Fort Smith, SU 3-5158
Krock, F. H. Lambiotte, Louis O. Lane, Charles S., Jr. Ling, P. C. Lockhart, William G. Lockwood, Franklin M McCraney, H. C. McDonald, H. P. McEwen, Stanley R. McMinimy, Donald J. Martin, Art 8. Mason, Joe Mason, Roy Meador, Don M. Mendelsohn, Ernest A Moulton, E. C., Jr. Olson, John D. Patton, Gerald K. Pence, Eldon D.	ISOO Dodson,   ISOO	Fort Smith, SU 2-4092 Fort Smith, SU 2-4093 Fort Smith, SU 2-4093 Fort Smith, SU 2-4097 Fort Smith, SU 2-2713 Fort Smith, SU 2-2713 Fort Smith, SU 3-5158 Fort Smith, SU 2-4092 Fort Smith, SU 2-5063 Fort Smith, SU 2-5063 Fort Smith, SU 2-5063
Krock, F. H. Lambiotte, Louis O. Lane, Charles S., Jr. Ling, P. C. Lockhart, William G. Lockwood, Franklin M McCraney, H. C. McDonald, H. P. McEwen, Stanley R. McMinimy, Donald J. Martin, Art 8. Mason, Joe Mason, Roy Meador, Don M. Mendelsohn, Ernest A Moulton, E. C., Jr. Olson, John D. Patton, Gerald K. Pence, Eldon D. Post, James M.	1500 Dodson,   1500 Dodson,   1214 North B,   1500 Dodson,   1500 Dodson,   1500 Dodson,   1500 Dodson,   1214 North B,   1500 Dodson,   1214 North O,   1500 Dodson,   1214 North B,   1500 Dodson,   100 North 16th,   1320 North Greenwood,   1800 North Greenwood,   1800 North Greenwood,   1800 North Greenwood,   1800 North Greenwood,   1818 Lexington,   1814 North Greenwood,   1818 Lexington,   1815 North Greenwood,   1818 Lexington,   1816 North Greenwood,   1816 North Gree	Fort Smith, SU 2-4092 Fort Smith, SU 2-4092 Fort Smith, SU 2-4092 Fort Smith, SU 2-4097 Fort Smith, SU 2-4097 Fort Smith, SU 2-4092 Fort Smith, SU 2-4092 Fort Smith, SU 2-4092 Fort Smith, SU 2-4093 Fort Smith, SU 2-4094 Fort Smith, SU 2-4094 Fort Smith, SU 2-4094 Fort Smith, SU 2-4095 Fort Smith, SU 2-4096 Fort Smith, SU 2-4096 Fort Smith, SU 2-4097 Fort Smith, SU 2-4097 Fort Smith, SU 2-4097 Fort Smith, SU 2-4097 Fort Smith, SU 2-4098 Fort Smith, SU 2-4098 Fort Smith, SU 2-4099 Fort Smith, SU 2-5063 Fort Smith, SU 2-5063 Fort Smith, SU 2-3063 Fort Smith, SU 2-3063 Fort Smith, SU 2-3063 Fort Smith, SU 2-3063
Krock, F. H. Lambiotte, Louis O. Lane, Charles S., Jr. Ling, P. C. Lockhart, William G. Lockwood, Franklin M McCraney, H. C. McDonald, H. P. McEwen, Stanley R. McMinimy, Donald J. Martin, Art 8. Mason, Joe Mason, Roy Meador, Don M. Mendelsohn, Ernest A Moulton, E. C., Jr. Olson, John D. Patton, Gerald K. Pence, Eldon D. Post, Jarmes M. ReMine, Phillip Gord	1500 Dodson,   1500 Dodson,   1214 North B,   1500 Dodson,   1500 Dodson,   17 Lexington,   1500 Dodson,   17 Lexington,   1214 North B,   1500 Dodson,   1500 Dodson,   1500 Dodson,   1500 Dodson,   17 Lexington,   17 Lexington,   17 Lexington,   17 Lexington,   17 Lexington,   18 Le	Fort Smith, SU 2-4092 Fort Smith, SU 2-2713 Fort Smith, SU 2-2713 Fort Smith, SU 2-2713 Fort Smith, SU 2-4092 Fort Smith, SU 2-5063 Fort Smith, SU 2-5063 Fort Smith, SU 2-3001 Fort Smith, SU 2-3016
Krock, F. H. Lambiotte, Louis O. Lane, Charles S., Jr. Ling, P. C. Lockhart, William G. Lockwood, Franklin M McCraney, H. C. McDonald, H. P. McEwen, Stanley R. McMinimy, Donald J. Martin, Art 8. Mason, Joe Mason, Roy Meador, Don M. Mendelsohn, Ernest A Moulton, E. C., Jr. Olson, John D. Matton, Gerald K. Pence, Eldon D. Post, James M. ReMine, Phillip Gord Rogers, Paul L.	1500 Dodson,   1500 Dodson,   1214 North B,   1500 Dodson,   1215 North B,   1500 Dodson,   1214 North B,   1500 Dodson,   1214 North B,   1500 Dodson,   1500 Dodson,   1500 Dodson,   1214 North O,   1500 Dodson,   1214 North B,   1500 Dodson,   1214 North B,   1500 Dodson,   1214 North B,   1500 Dodson,   1200 North I6th,   1500 No	Fort Smith, SU 2-4092 Fort Smith, SU 2-4093 Fort Smith, SU 2-4092 Fort Smith, SU 2-4092 Fort Smith, SU 2-4092 Fort Smith, SU 2-2713 Fort Smith, SU 2-2713 Fort Smith, SU 2-2713 Fort Smith, SU 2-4092 Fort Smith, SU 2-5063 Fort Smith, SU 2-3001 Fort Smith, SU 3-3166 Fort Smith, SU 3-3169 Fort Smith, SU 3-3103
Krock, F. H. Lambiotte, Louis O. Lane, Charles S., Jr. Ling, P. C. Lockhart, William G. Lockwood, Franklin M McCraney, H. C. McDonald, H. P. McEwen, Stanley R. McMinimy, Donald J. Martin, Art 8. Mason, Joe Mason, Roy Meador, Don M. Mendelsohn, Ernest A Moulton, E. C., Jr. Olson, John D. Patton, Gerald K. Pence, Eldon D. Post, James M. ReMine, Phillip Gord Rogers, Paul L. Saviers, Boyd M	1500 Dodson,   1500 Dodson,   1214 North B,   1500 Dodson,   1215 North B,   1500 Dodson,   1214 North B,   1500 Dodson,   1214 North B,   1500 Dodson,   1500 Dodson,   1500 Dodson,   1214 North O,   1500 Dodson,   1214 North B,   1500 Dodson,   1214 North B,   1500 Dodson,   1214 North B,   1500 Dodson,   1200 North I6th,   1500 No	Fort Smith, SU 2-4092 Fort Smith, SU 2-4093 Fort Smith, SU 2-4092 Fort Smith, SU 2-4092 Fort Smith, SU 2-4092 Fort Smith, SU 2-2713 Fort Smith, SU 2-2713 Fort Smith, SU 2-2713 Fort Smith, SU 2-4092 Fort Smith, SU 2-5063 Fort Smith, SU 2-3001 Fort Smith, SU 3-3166 Fort Smith, SU 3-3169 Fort Smith, SU 3-3103
Krock, F. H. Lambiotte, Louis O. Lane, Charles S., Jr. Ling, P. C. Lockhart, William G. Lockwood, Franklin M McCraney, H. C. McDonald, H. P. McEwen, Stanley R. McMinimy, Donald J. Martin, Art 8. Mason, Joe Mason, Roy Meador, Don M. Mendelsohn, Ernest A Moulton, E. C., Jr. Olson, John D. Patton, Gerald K. Pence, Eldon D. Post, James M. ReMine, Phillip Gord Rogers, Paul L. Saviers, Boyd M. Schimer, Poy E.	1500 Dodson,   1500 Dodson,   1500 Dodson,   1214 North B,   1500 Dodson,   1500 North B,   1500 Dodson,   1500 North Greenwood,   818 Lexington,   1500 Dodson,   1500 D	Fort Smith, SU 2-4092 Fort Smith, SU 2-4093 Fort Smith, SU 2-4094 Fort Smith, SU 2-4092 Fort Smith, SU 3-0285 Fort Smith, SU 3-0285 Fort Smith, SU 2-4092 Fort Smith, SU 3-4803 Fort Smith, SU 3-4803 Fort Smith, SU 3-4803 Fort Smith, SU 2-5983 Fort Smith, SU 2-2988
Krock, F. H. Lambiotte, Louis O. Lane, Charles S., Jr. Ling, P. C. Lockhart, William G. Lockwood, Franklin M McCraney, H. C. McDonald, H. P. McEwen, Stanley R. McMinimy, Donald J. Martin, Art 8. Mason, Joe Mason, Roy Meador, Don M. Mendelsohn, Ernest A Moulton, E. C., Jr. Olson, John D. Patton, Gerald K. Pence, Eldon D. Post, James M. ReMine, Phillip Gord Rogers, Paul L. Saviers, Boyd M. Schimer, Poy E.	1500 Dodson,   1500 Dodson,   1214 North B,   1500 Dodson,   1500 North B,   1500 Dodson,   1500 North Greenwood,   1500 North Greenwood,   1500 Dodson,	Fort Smith, SU 2-4092 Fort Smith, SU 2-4093 Fort Smith, SU 2-4094 Fort Smith, SU 2-4092 Fort Smith, SU 3-0285 Fort Smith, SU 3-0285 Fort Smith, SU 2-4092 Fort Smith, SU 3-4803 Fort Smith, SU 3-4803 Fort Smith, SU 3-4803 Fort Smith, SU 2-5983 Fort Smith, SU 2-2988
Krock, F. H. Lambiotte, Louis O. Lane, Charles S., Jr. Ling, P. C. Lockhart, William G. Lockwood, Franklin M McCraney, H. C. McDonald, H. P. McEwen, Stanley R. McEwen, Stanley R. McMinimy, Donald J. Martin, Art 8. Mason, Joe Mason, Roy Meador, Don M. Mendelsohn, Ernest A Moulton, E. C., Jr. Olson, John D. Patton, Gerald K. Pence, Eldon D. Post, James M. ReMine, Phillip Gord Rogers, Paul L. Saviers, Boyd M. Schirmer, Roy E. Scott, M. H. Shearer, F. E.	1500 Dodson,   1500 Dodson,   1500 Dodson,   1214 North B,   1500 Dodson,   1214 North B,   1500 Dodson,   1214 North B,   1500 Dodson,   100 North 16th,   320 North Greenwood,   1818 Lexington,   1214 North Greenwood,   1500 Dodson,   1420 South I,   602 Garrison,   1500 Dodson,   1420 South I,   602 Garrison,   1500 Dodson,   1500	Fort Smith, SU 2-4092 Fort Smith, SU 2-4093
Krock, F. H. Lambiotte, Louis O. Lane, Charles S., Jr. Ling, P. C. Lockhart, William G. Lockwood, Franklin M McCraney, H. C. McDonald, H. P. McEwen, Stanley R. McMinimy, Donald J. Martin, Art 8. Mason, Joe Mason, Roy Meador, Don M. Mendelsohn, Ernest A Moulton, E. C., Jr. Olson, John D. Patton, Gerald K. Pence, Eldon D. Post, James M. ReMine, Phillip Gord Rogers, Paul L. Saviers, Boyd M. Schirmer, Roy E. Scott, M. H. Shearer, F. E. Sherman, Robert L.	1500 Dodson,   1500 Dodson,   1214 North B,   1500 Dodson,   1214 North B,   1500 Dodson,   1214 North B,   1500 Dodson,   100 North 16th,   1500 North Greenwood,   1500 Dodson,   100 North 16th,   1500 Dodson,   100 North Greenwood,   1500 Dodson,   1500 Dodson,   1500 Dodson,   1420 South   1,   1,   1,   1,   1,   1,   1,   1	Fort Smith, SU 2-4092 Fort Smith, SU 2-4092 Fort Smith, SU 2-4092 Fort Smith, SU 2-4097 Fort Smith, SU 2-4097 Fort Smith, SU 2-4092 Fort Smith, SU 2-4092 Fort Smith, SU 2-4092 Fort Smith, SU 2-4093 Fort Smith, SU 2-4094 Fort Smith, SU 3-3166 Fort Smith, SU 3-3166 Fort Smith, SU 3-38653 Fort Smith, SU 2-2983 Fort Smith, SU 2-4092
Krock, F. H. Lambiotte, Louis O. Lane, Charles S., Jr. Ling, P. C. Lockhart, William G. Lockwood, Franklin M McCraney, H. C. McDonald, H. P. McEwen, Stanley R. McMinimy, Donald J. Martin, Art 8. Mason, Joe Mason, Roy Meador, Don M. Mendelsohn, Ernest A Moulton, E. C., Jr. Olson, John D. Patton, Gerald K. Pence, Eldon D. Post, James M. ReMine, Phillip Gord Rogers, Paul L. Saviers, Boyd M. Schirmer, Roy E. Scott, M. H. Shearer, F. E. Sherman, Robert L.	1500 Dodson,   1500 Dodson,   1214 North B,   1500 Dodson,   1214 North B,   1500 Dodson,   1214 North B,   1500 Dodson,   100 North 16th,   1500 North Greenwood,   1500 Dodson,   100 North 16th,   1500 Dodson,   100 North Greenwood,   1500 Dodson,   1500 Dodson,   1500 Dodson,   1420 South   1,   1,   1,   1,   1,   1,   1,   1	Fort Smith, SU 2-4092 Fort Smith, SU 2-4092 Fort Smith, SU 2-4092 Fort Smith, SU 2-4097 Fort Smith, SU 2-4097 Fort Smith, SU 2-4092 Fort Smith, SU 2-4092 Fort Smith, SU 2-4092 Fort Smith, SU 2-4093 Fort Smith, SU 2-4094 Fort Smith, SU 3-3166 Fort Smith, SU 3-3166 Fort Smith, SU 3-38653 Fort Smith, SU 2-2983 Fort Smith, SU 2-4092
Krock, F. H. Lambiotte, Louis O. Lane, Charles S., Jr. Ling, P. C. Lockhart, William G. Lockwood, Franklin M McCraney, H. C. McDonald, H. P. McEwen, Stanley R. McMinimy, Donald J. Martin, Art 8. Mason, Joe Mason, Roy Meador, Don M. Mendelsohn, Ernest A Moulton, E. C., Jr. Olson, John D. Patton, Gerald K. Pence, Eldon D. Post, James M. ReMine, Phillip Gord Rogers, Paul L. Saviers, Boyd M. Schirmer, Roy E. Scott, M. H. Shearer, F. E. Sherman, Robert L.	ISOO Dodson,   ISOO	Fort Smith, SU 2-4092 Fort Smith, SU 2-4093 Fort Smith, SU 2-4094 Fort Smith, SU 2-4094 Fort Smith, SU 2-4094 Fort Smith, SU 3-4094 Fort Smith, SU 3-4094 Fort Smith, SU 3-4094 Fort Smith, SU 2-4094 Fort Smith, SU 2-4094 Fort Smith, SU 2-4094 Fort Smith, SU 2-3001 Fort Smith, SU 2-3001 Fort Smith, SU 2-3001 Fort Smith, SU 3-3166 Fort Smith, SU 3-3166 Fort Smith, SU 3-3166 Fort Smith, SU 3-3865 Fort Smith, SU 3-4803 Fort Smith, SU 3-4092 Fort Smith, SU 3-5241 Fort Smith, SU 3-7277
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Stewart, J. B	603 Lexington, Fort Smith, SU 3-8917
Thompson, James B.	605 Lexington, Fort Smith, SU 2-60BI
Thompson, John Kenneth	100 South 14th, Fort Smith, SU 3-11B3
Thompson, Robert J.	605 Lexington, Fort Smith, SU 2-6081
Watts, John C., Jr.	1400 South D. Fort Smith, SU 3-0211
Whittaker, L. A., Jr.	621 South 21st, Fort Smith, SU 3-5231
Wideman, John W. 300	North Greenwood, Fort Smith, SU 3-0225
Williams, Carl L.	500 Lexington, Fort Smith, SU 2-B667
Wilson, Carl L.	1500 Dodson, Fort Smith, SU 2-4092
Wilson, Morton C.	1500 Dodson, Fort Smith, SU 2-4092
Woods, William Merle	Box 246, Huntington, ME 1-4351

#### SEVIER COUNTY

Daniel Frank	Queen Clinic, DeQueen, JU 4-2022
	102 North 4th, DeQueen, JU 4-2344
	102 North 4th, DeQueen, JU 4-2344
	102 North 4th, DeQueen, JU 4-2344
Hendricks, John S.	Address Unknown
	West Gilson, DeQueen, JU 4-2022
	Dueen Clinic, DeQueen, JU 4-2022
	West Gilson, DeQueen, JU 4-2022
	West Gilson, DeQueen, JU 4-2022

#### ST. FRANCIS COUNTY

Barr, Austin F. Bradley, Adron M. Chaffin, E. J. Cogburn, H. N. Collins, E. M., Jr. Crawley, C. E. Cuonzo, Richard A. Go, Alex S. Y. Hayden, William F. Hollis, Herbert H. Jalon Horsen, John Neal McGinnis, Robert S. McPhail, George T. Roy, J. Max Sexton, Giles A.  1740 Lindauer Rd., Forrest City, ME 3-1225 326 North Rosser, Forrest City, ME 3-1425 4209 219 No. Rosser, Forrest City, ME 3-1237 317 No. Washington, Forrest City, ME 3-2245 4209 219 No. Rosser, Forrest City, ME 3-2245 317 No. Washington, Forrest City, ME 3-2245 4219 No. Rosser, Forrest City, ME 3-2245 4219 North Rosser, Forrest City, ME 3-2245

#### UNION COUNTY

UNION COUNTY				
Moore, Berry L., Sr. Moore, Gene D. Murphy, Garland D., Murphy, Garland D., Murphy, Henry A. Murphy, Randolph Newton, William L. Priddy, James S. Rainwater, W. S. Riley, Warren S. Rogers, Henry B. Sheppard, Jack M. Sheppard, Julius K. Stevens, Willis M., Jr.	111 West Peach, 430 S. W. Avenue, 427 West Oak, 112 West Peach, 524 West Faulkner, 312 Thompson, Strong CI 514 West Faulkner, State Hosp 519 West Faulkner, 430 S. W. Avenue, 427 West Oak, 445 West Oak, 445 West Oak, 700 West Faulkner, 430 S. W. Avenue, 316 Schuler Building, 700 West Faulkner, 427 West Oak, 700 West Faulkner, 427 West Oak, 1081/2 N. Washington, 1081/2 N. W	El Dorado, UN 3-418b El Dorado, UN 3-5731 El Dorado, UN 3-5731 El Dorado, UN 3-7128 El Dorado, UN 3-7128 El Dorado, UN 3-866 Pike Hotel, Little Rock Smackover, PA 5-360 El Dorado, UN 3-4101 El Dorado, UN 3-5135 El Dorado, UN 3-4508 El Dorado, UN 2-4994 El Dorado, UN 3-7154 El Dorado, UN 3-7154 El Dorado, UN 3-7154 El Dorado, UN 3-7154 El Dorado, UN 3-7154		
Riley, Warren S	526 West Faulkner	El Dorado, UN 3-4508 El Dorado, UN 2-4994		
Sheppard, Jack M Sheppard, Julius K	52B West Faulkner, 52B West Faulkner.	El Dorado, UN 3-7154 El Dorado, UN 3-7154		
Stevens, Willis M., Jr. Thibault, Frank G.	516 West Faulkner 430 South West Ave.	El Dorado, UN 2-4937 El Dorado, UN 3-7163		
Wharton, Joe B., Jr. White, D. E. Wilson, Larkin M., Jr Yocum, David M., Jr.	427 West Oak 516 West Faulkner Armstrong Building 430 Southwest Ave. 412 No. Washington	, El Dorado, UN 2-4221 El Dorado, UN 3-3712 El Dorado, UN 3-7163 El Dorado, UN 2-3411		

#### WASHINGTON COUNTY

Wozencraft, W. L 310 North Fletcher, Fayetteville, HI 2-5526	Wozenciali, W. L 310 North Fletcher, Fayerleville, Fit 2-3320	Brown, Spencer H. Buckley, Carie Dan Buice, James W. Wa Burnside, Wade W. J Butler, George Harriso Butt, W. J. Clark, LeMon DeLaney, Joseph P. DePalma, Anthony T. Dodson, Charles D. Dorman, John W. Edmondson, Chas. T. Edmondson, Rogers P. Finch, Stephen B. Fowler, W. A. Fowler, W. Gerald Gardner, Buford M. Gilbert, Allan A. Graham, Ronald A. Gray, Thomas W. Greenhaw, James J. Hall, Joe Bill Harrison, Andrew J. Hathcock, L. Henry, Morriss M. Kaylor, Coy C. Lawson, Wilbur G. Leming, Howell Lesh, Ruth E. Lesh, Vincent O. McAllister, Max F. McAnelly, Verla P. Martin, Harold E. Mashburn, James D. Mock, William H. Moore, Arthur Morry, John Warren Nettleship, Anderson Nettleship, Anderson Nettleship, Anderson Nettleship, Mae B. Ogden, Fred W. Parker, Joe C. Patrick, James K. Robon, Nancy A. Riggall, Cecil Sacks, Wilma C. Siegel, Lawrence H. Sisco, Friedman Smith, Austin C. Stocker, W. J. Ward, Herbert Wend Wheaf, Ed.	n. 1031 No. College, Fayetteville, Hl 2-6247 316 West Dickson, Fayetteville, Hl 2-7563 241 West Spring, Fayetteville, Hl 2-7563 241 West Spring, Fayetteville, Hl 2-6256 Gainesville, Florida 1031 North College, Fayetteville, Hl 2-2002 946 California Drive, Fayetteville, Hl 3-3387 Springdale Clinic, Springdale, PL 1-4637 Quandt & Young Sts., Springdale, PL 1-9236 Quandt & Young Sts., Springdale, PL 1-9236 6171/2 North College, Fayetteville, Hl 3-3491 301 West Mountain, Fayetteville, Hl 3-3491 301 West Mountain, Fayetteville, Hl 2-7381 39 East Center, Fayetteville, Hl 2-7381 39 East Center, Fayetteville, Hl 2-7381 101 Y. A. Hospital, Fayetteville, Hl 2-7381 101 Y. North Spring, Springdale, PL 1-5091 675 Lollar Lane, Fayetteville, Hl 2-7333 W. Dickson & Block, Fayetteville, Hl 2-7333 M. Dickson & Block, Fayetteville, Hl 3-3347 P. O. Box 63, Fayetteville, Hl 3-3347 207 East Dickson, Fayetteville, Hl 2-7161  Mock Clinic, Prairie Grove, Vl 6-2321 675 Lollar Lane, Fayetteville, Hl 2-5377 Mock Clinic, Prairie Grove, Vl 6-2321 675 Lollar Lane, Fayetteville, Hl 2-5386  1749 No. College, Fayetteville, Hl 2-7161  130 North Spring, Springdale, PL 1-4579  P. O. Box 656 Fayetteville, Hl 2-866  Coupeville, Washington  Coupeville, Washington  Coupeville, Washington  Coupeville, Washington  Coupeville, Washington  Coupeville, Ml 2-8511  22 East Spring, Fayetteville, Hl 2-5111  22 Ea
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#### WHITE COUNTY

WHITE COUNTY		
Abington, Eugene H. Adair, Thomas Lester Allbright, Sam J. Arrington, Thell S. Bridges, Olen W. Brown, A. R. Davis, William L. Dodd, William Carroll Dunklin, A. J. Edwards, Hugh R. Formby, Thomas A. Hawkins, M. C., Jr. Hudgins, Albert H. Jackson, C. W. Kinley, James D. Mattox, William J. Paine, C. H., Jr. Rodgers, Porter R. Sanford, Sloan M. Short, Harold Sloan, Dewey W. Smith, Bernard C.	Beebe, TA B-5455  Bald Knob, PA 4-3220  III East Arch, Searcy, CH 5-3473 Birmingham, Alabama  1205 East Race, Searcy, CH 5-4958 910 East Race, Searcy, CH 5-3566  Bald Knob, PA 4-3240  103 North Hickory, Searcy, CH 5-2191 607 Woodruff, Searcy, CH 5-2811 910 East Race, Searcy, CH 5-3811 910 East Race, Searcy, CH 5-3564 403 East Lincoln, Searcy, CH 5-561  Judsonia, RA 9-3435 Beebe, TA B-3388 910 East Race, Searcy, CH 5-3566 607 Woodruff, Searcy, CH 5-3566 607 Woodruff, Searcy, CH 5-3566 110 East Race, Searcy, CH 5-3566 110 East Race, Searcy, CH 5-3566 110 West Center, Beebe, TA B-5561 130 West Center, Beebe, TA B-5561 130 West Center, Beebe, TA B-5561	

#### WOODRUFF COUNTY

Dungan, C. E.	101 North 3rd, Augusta, 347-2481
Ferrari, Victor J.	
Inman, Fred C., Jr.	Court Street, Carlisle, LU 2-2596
Maguire, Frank C., Jr.	200 South 4th, Augusta, 347-2131
Maguire, Frank C., Sr.	200 South 4th, Augusta, 347-2131
Millwee, Fay B	Box 24B, McCrory, 3524
Morris, John W	McCrory, 2524
Williams, W. J. B.	Cotton Plant, 4384





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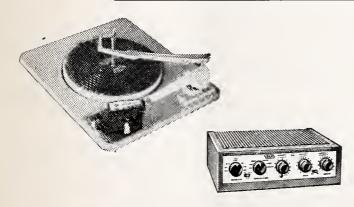
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## OPPORTUNITIES TO PRACTICE MEDICINE IN ARKANSAS

BEARDEN—Population 1,268, no physician in practice in community. Principal source of income for area is industrial payroll. Community has supported physician for many years. 16 miles from Camden.

DERMOTT. Southeast Arkansas. Population 3,600. Opening for associate in general practice.

DeQUEEN—WANTED—Doctor—call or write Dr. Rodger C. Dickinson, DeQueen, Arkansas (Phone JU 4-2344).

DeWITT—Population 3,000. Opportunity for association with another physician in a clinic. Separate offices, share waiting room and other clinic facilities and equipment. Well-equipped clinic—5 beds and bassinets.

FORT SMITH—Opening in either Internal Medicine or Pediatrics in new, modern office building, associated with nine other physicians (2 internists, no pediatrician) on individual basis.

FORT SMITH—Openings in Surgery, Urology and Orthopedics with clinic. Present staff of 8, none in these specialties.

GENTRY. Northwest Arkansas. Population about 700. Physician wants young man to take over his pratice so that he may retire.

HARRISON. Physician needed to take over practice of E.N.T. man who passed away recently. Northwest Arkansas. Population 6,500.

HOPE—Population 8,600. Opportunity for young man to associate with general practitioner. Physician has 57-bed general hospital. Industrial plants, poultry, cattle and farming offer sources of income for area.

LAKE VILLAGE—General practitioner needed. Population of Lake Village is 3,000. 40-bed hospital owned by physician-partnership. Physician urgently needed to handle large practice.

LEPANTO—Population 1,500. Modern clinic built about five years ago left vacant at the death of physician. Includes several beds for hospital care and is approved as a hospital. Doctor had a good practice. Clinic could be rented or purchased. One other physician in town.

MARION—Physician must give up his practice because of his health and would like to have young man take over practice. Nine room clinic available. Population about 900.

NEWARK—Population about 1,000. Community has been without physician since 1959. Lions Club sponsoring drive to get a doctor for Newark. Some assistance would be available to physician. Income for the area is derived from farming, livestock, and wood producing mills.

NEWPORT—Opening in general practice with obstetrics at clinic-hospital. Young man with some experience preferred. Attractive proposition.

NORTH LITTLE ROCK—Otolaryngologist needed. New Memorial Hospital. Population of city 58,000, no otolaryngologist.

RUSSELLVILLE—Opportunity for pediatrician with five man clinic. Population of Russellville is about 9,000.

SEARCY—Opportunity for board eligible or board certified surgeon with group of four doctors (one surgeon).

SMACKOVER—Population 2,500. General practitioner wants associate. Practice largely industrial. Physician owns 18-bed hospital.

STRONG—Population about 850, no doctor in community. Fully equipped 3-bed clinic could be rented or purchased. Timber, cattle, and oil field work are main sources of income.

WILMOT. Southeast Arkansas. Population 750, large trade area. Fully equipped clinic-hospital available, rent free. Primarily agricultural town.

For further information on these and other locations contact:

PHYSICIAN PLACEMENT SERVICE ARKANSAS MEDICAL SOCIETY
Post Office Box 1345 — Fort Smith, Arkansas



JOE VERSER, M.D.

Harrisburg

PRESIDENT

ARKANSAS MEDICAL SOCIETY

1963-1964



## THE JOURNAL OF THE ATRANSUS MEDICAL SOCIETY

PUBLISHED MONTHLY UNDER DIRECTION OF COUNCIL

VOLUME 60 · JUNE, 1963 · NUMBER 1

### PROCEEDINGS

## 87th Annual Session

## ARKANSAS MEDICAL SOCIETY

Hotel Marion - Little Rock

April 22-24, 1963

# FIRST MEETING HOUSE OF DELEGATES 3:30 p.m., April 21, 1963 Forum Room, Hotel Marion

Speaker C. Lewis Hyatt called the meeting to order in the Forum Room of the Hotel Marion and requested C. R. Ellis of Malvern to give the invocation.

C. G. Sutherland of Jackson, Mississippi, fraternal delegate from the Mississippi State Medical Association was introduced to the House of Delegates by the Speaker.

Mr. Schaefer called the roll of delegates. The following delegates and members seated as delegates by action of the House were present:

ARKANSAS, R. H. Whitehead, Sr.; ASHLEY, E. C. Gresham; BAXTER, John F. Guenthner; BENTON, E. N. McCollum; BOONE, Henry V. Kirby; BRADLEY, George F. Wynne; CLARK, Eli Gary; CRAIGHEAD-POINSETT, Orval Riggs, Glen Keller, Vestal B. Smith; CRITTENDEN, Gilbert Jay; DESHA, J. H. Hellnms; DREW, C. Lewis Hyatt; FRANKLIN, William C. Hensley; GARLAND, Dubose Murray, Vernon Sammons; GRANT, Miles F. Kelly; GREENE-CLAY, A. E. Andrews; HOT SPRING, C. R. Ellis; INDEPENDENCE, O. J. T. Johnston; JEFFERSON, Oliver C. Raney, Ross E. Maynard; JOHNSON, Guy Shrigley; LINCOLN, Charles W. Dixon; POPEYELL, Gene D. Ring; PULASKI, Robert Watson, John McC. Smith, Edgar Easley, Thomas Jansen, Amail Chudy, T. D. Brown, Joe Scruggs, Hal Black, Jim Morrison; SEBAS-

TIAN, Murphey Henry, Louise Henry; UNION, J. O. Cooper. Berry Moore, Jr.; WASHINGTON, James Mashburn, Wendell Ward; WHITE, C. W. Jackson, COUNCILORS, Paul Gray, T. E. Townsend, H. W. Thomas, George Burton. John L. Ruff, John Wood, J. W. Kennedy, Bill Dave Stewart, Ross Fowler, Stanley Applegate, L. A. Whittaker, C. C. Long. OFFICERS, President H. King Wade, Jr., President-elect Joe Verser, Speaker of the House C. Lewis Hyatt, Vice Speaker of the House J. P. Price, Secretary H. Elvin Shuffield. PAST PRESIDENTS, Wm. A. Snodgrass, James M. Kolb, Louis K. Hundley, T. Duel Brown.

Speaker Hyatt called for a report from the Credentials Committee. Dr. Edgar Easley, chairman of the Credentials Committee, reported that a quorum was present.

Upon the motion of Hundley and Brown, the House adopted the minutes of the 86th Annual Session as published in the June 1962 issue of the Journal of the Arkansas Medical Society.

Chairman of the Council H. W. Thomas presented to the House the following supplementary report of the Council covering the meeting of March 31, 1962:

#### REPORT OF THE COUNCIL

The Council met on Sunday, March 31st, and transacted the following business:

- 1. Approved joining the Student American Medical Association as a sustaining member with dues of \$100 per year.
- 2. Gave Elvin Shuffield a standing vote of thanks for his

- outstanding accomplishment working with the State Legislature. Voted authority to pay expenses of the medical consultation room during the last legislature.
- 3. Approved nominations to the Arkansas State Arbitration Commission of R. C. Shanlever for the first district and Thomas M. Durham for the seventh district.
- 4. Referred to a special committee a Council motion to try to accomplish a change of Rule 21 of the Workmen's Compensation Commission to give patients free choice of physician.
- 5. Gave general endorsement to the idea of wearing tags or other means of identifying the wearer as having a special medical problem.
- 6. Learned with regret that Ellery C. Gay, Sr., would not accept a new appointment to the Board of Trustees of Blue Cross-Blue Shield and voted a resolution of commendation to him. Nominated Charles Henry of Little Rock to the vacancy occurring upon completion of Dr. Gay's present term.
- 7. Directed the Executive Secretary to fit the expanding programs of the American Medical Association into the Arkansas Medical Society program according to the limitations of present personnel and money available and in accordance with policies laid down by the Arkansas Medical Society.
- 8. Appointed a Committee on National Legislation and directed the Committee on Constitutional Revisions to submit an amendment to the constitution to provide a standing committee on National Legislation.
- 9. Received information on a program of education presented by the Arkansas Tuberculosis Association and voted to take no action.
- 10. Accepted and approved the annual report of audit of the Arkansas Medical Society.
- 11. Voted to delegate any doctor paying his own way as



President Joe Verser presented out-going president H. King Wade, Jr., an appreciation plaque from the Medical Society for his work as president. Annual Banquet, Hotel Marion, April 23, 1963.

- official representative to the I50th anniversary of the Vermont Medical Association.
- 12. Acted favorably upon a request by the Hospital-Insurance-Physician Committee to increase the number of physician representatives to six.
- 13. Directed that the Arkansas Medical Society take out membership in the Arkansas Public Health Association.
- 14. Appointed Dean Shorey to represent Arkansas at an AMA reference committee hearing on interns to be held in Atlantic City in June.

Speaker Hyatt referred the supplementary report of the Council to Reference Committee Number One.

The chairman of the Constitutional Revisions Committee, Louis K. Hundley, read the following proposed changes in the Society's Constitution and By-Laws.

#### NO. 1-NATIONAL LEGISLATIVE COMMITTEE

Amend By-Laws, Chapter VIII, Section 1(a)'2' to read: 2. Committee on Medical Legislation (Sub-Committee on National Legislation) (adds words "sub-committee on national legislation").

#### NO. 2-EXEMPTIONS

Delete Section I', Article IV of Constitution (provision for "military members" changed to by-laws). Amend By-Laws, Chapter I, Section IV, to read:

Section 4. Life Membership

An active member who shall have attained his eightieth year and shall have been a member of his county medical society in Arkansas or elsewhere in the United States continuously since beginning the practice of medicine, or who for fifty years shall have been continuously a member of his county medical society in Arkansas or elsewhere in the United States, shall, upon establishing the above facts to the satisfaction of his county medical society, and upon the recommendation of such society, be granted the status of a Life Member. Such member shall enjoy full membership privileges and shall be exempt from the payment of further dues or assessments. (makes life membership a separate section)

Add Section 5.

#### Section 5. Affiliate Membership

An active member in good standing in his county society may, upon the recommendation of such society, be granted affiliate membership with full voting and other privileges where one or more of the following conditions exist: retirement from active practice, physical or other disability of a character preventing the practice of medicine, a serious and prolonged illness, or financial reverses. Affiliate membership shall be on an annual basis only and a member must be recommended each year for such special status by the secretary and president of his county medical society following a review and reassessment of his particular situation. An affiliate member shall enjoy full membership privileges and shall be exempt from the payment of dues and assessments during the year in which he is granted such status, and a certificate of membership shall be issued to him for such year.

(makes affiliate membership a separate section)

Add Section 6:

Section 6. Affiliate Membership for Interns and Residents

An annual affiliate membership shall be granted interns and residents, provided they are fully or partially excused from the payment of county society dues, and provided the request for exemption is transmitted through a component society of the Arkansas Medical Society. The requirement for active membership prior to exemption shall be waived for such affiliate members. This type of member shall be accorded full privileges except that he may not vote or hold office, and he shall receive the Journal of the Arkansas Medical Society. (making affiliate membership possible for interns and residents, rewording of present paragraph of old Section 4).

Add Section 7:

Section 7. Military Members

Regular members of the Arkansas Medical Society who are in the service of the armed forces of the United States, not as career officers, may be classified as military members, and carried on the rolls of their respective county societies as such. Military members shall have a waiver of dues during the time of service, provided that they are in good standing at the time they entered the armed forces. Military members shall enjoy full membership privileges and certificates of membership shall be issued to them for each year.

Dr. Hundley explained that this was the first reading of the proposed amendments. During the year, the proposed revisions will be published twice in the Journal of the Arkansas Medical Society. They will then be read again at the House of Delegates meeting at the next Annual Session for final action.

Elvin Shuffield, chairman of the Committee on Medical Legislation, presented the annual report of his committee. The report was referred to Reference Committee No. 1.

C. R. Ellis made a few brief remarks concerning the excellent work done by Dr. Shuffield as chairman of the Committee on Medical Legislation and announced that Dr. Shuffield had been invited to talk on "Working With the State Legislature" at a meeting of the American Academy of General Practice to be held in Kansas City in September. The House gave Dr. Shuffield a standing ovation.

T. E. Townsend, chairman of the Sub-Committee on Maternal and Child Welfare, announced that all doctors would be getting a letter from the Department of Health, Education, and Welfare, as notification of the availability of Whooping Cough Serum for those patients who cannot afford same. The letter will include information on where and how to obtain the serum.

Speaker Hyatt announced meetings of Reference Committees and vacancies occurring on the Arkansas State Board of Health.

James M. Kolb, Sr., of Clarksville, presented to William A. Snodgrass, Jr., of Little Rock, a publication from the 1927 Annual Meeting of the Arkansas Medical Society which had been written by Dr. Snodgrass' father and had been previously given by him to Dr. Kolb's father.

Robert Watson made a brief report on the Medical Education Foundation for Arkansas and gave members of the House information on disbursements from the fund.

President Wade commended Dr. Watson for getting the Foundation off to such a good start, stating that he felt that the establishment of the Foundation was one of the finest things the Arkansas Medical Society could do to help the University of Arkansas Medical Society. Dr. Wade urged active support of the Foundation by Society members.

Union County Delegate Berry L. Moore, Jr., presented the following resolution:

## RESOLUTION ON I. R. P. (Individual Responsibility Plan)

WHEREAS, the practice of private medicine depends upon the personal relationship between the patient and his physician, and

WHEREAS, this relationship, which has made the system of private medicine in these United States the finest in all history, requires certain important responsibilities on the part of both the patient and his physician, and



President H. King Wade, Jr., administers the oath of office to the new president, Joe Verser. Annual Banquet, Hotel Marion, April 23, 1963.



Henry G. Hollenberg presides at the opening general session. Lecture Hall, Robinson Auditorium, April 22, 1963.

WHEREAS, with the advent of government welfare plans and private health insurance plans certain responsibilities and duties which were formerly required of the patient are now assumed by these "third parties", and

WHEREAS, the practice of private medicine cannot continue if these third parties continue to assume more of these responsibilities and duties,

NOW THEREFORE BE IT RESOLVED by the Arkansas Medical Society, meeting in its 87th Annual Session in Little Rock, Arkansas, on April 24, 1963, that we support all those plans which preserve the vital patient-physician relationship with all its duties and responsibilities binding on each party, and that further, because the Individual Responsibility Plan as outlined by groups in the San Fernando Valley District of the Los Angeles County Medical Association embodies these principles, we do approve and endorse this plan as one means to preserve our practice of private medicine.

Speaker Hyatt referred the resolution to Reference Committee Number Two.

The Speaker announced that the selection of the nominating committee for election of officers would be made. Delegates from the various councilor districts held meetings on the floor and selected the nominating committee as follows: First District, Vestal B. Smith; Second District, O. J. T. Johnston; Third District, R. H. Whitehead, Sr.; Fourth District, J. P. Price; Fifth District, George Burton; Sixth District, John Wood; Seventh Dis-



H. W. Thomas and C. Lewis Hyatt enjoy a lighter moment at the free coffee bar. Exhibition Hall, Robinson Auditorium, April 22, 1963.

trict, Jack W. Kennedy: Eighth District, John McC. Smith; Ninth District, Ross Fowler; Tenth District, James M. Kolb.

Upon motion of Brown and Hundley, the House of Delegates adjourned at 5:00 p.m.

#### SENIOR MEDICAL DAY BANQUET 8:00 p.m., April 21, 1963 Continental Room, Hotel Marion

The tenth annual banquet for the senior medical students at the University of Arkansas School of Medicine was held on Sunday evening. This program is co-sponsored by the Arkansas Medical Society and the Arkansas Academy of General Practice.

The president of the Society, H. King Wade, Jr., presided at the banquet. Mrs. Hoyt Choate spoke on the privileges and responsibilities of a doctor's wife. The advantages and rewards of general practice were discussed by Amail Chudy of North Little Rock. T. E. Townsend of Pine Bluff discussed possibilities and rewards of working as a member of organized medicine and Mr. Kearney Dietz of the Little Rock Chamber of Commerce pointed out the wonderful promise of opportunity held out to physicians and other professional men by the State of Arkansas.

#### FIRST GENERAL SESSION 9:00 a.m., Monday, April 22nd, 1963 Lecture Hall, Robinson Auditorium

The First General Session of the 87th Annual

Session opened at 9:00 a.m. on Monday, April 22nd, with a showing of the film "Diagnosis of Common Congenital Heart Defects". The scientific program began at 9:30 a.m. with First Vice President Henry Hollenberg of Little Rock presiding. Scientific papers were presented as follows: "Current Concepts in the Recognition and Management of Diabetes Mellitus" by George K. Mitchell of Little Rock; "The Gangrenous Bite of the Brown Spider in Arkansas" by Calvin J. Dillaha of Little Rock; "Troublesome Urologic Problems in the Female" by Ian. M. Thompson of Columbia, Missouri.

At 11:30 a.m. an invocation was given by The Reverend Paul Bumpers of Pulaski Heights Methodist Church and H. King Wade, Jr., of Hot Springs, presented his President's Address.

# SECOND GENERAL SESSION 1:30 a.m., Monday, April 22nd, 1963 Lecture Hall, Robinson Auditorium

The Second Vice President, Berry L. Moore, Sr., of El Dorado, presided at the second general session and presented the following program: "The Diagnosis and Treatment of Soft Tissue Tumors", by Richard Martin of Houston, Texas; "Medical Aspects of Esophageal Hiatus Hernia", by Gordon McHardy of New Orleans; "The Treatment of Bronchial Asthma in Children" by Sheldon C. Siegel of Los Angeles, California; "The Role of the Physician Anesthesiologist" by M. Digby Leigh of Los Angeles, California. A closed circuit television show from the University

of Arkansas Medical Center was viewed by members and guests at 4:00 p.m. in the Lecture Hall.

## Monday Evening COCKTAIL PARTY

A Cocktail Party was held Monday night for all members of the Medical Society and their wives. Highlights of the party were the excellent hors d'oeuvres and group singing led by Betty Fowler, professional pianist.

#### FIFTY YEAR CLUB BREAKFAST Tuesday, April 23rd, 1963

The Fifty Year Club of the Arkansas Medical Society met for breakfast at 7:30 a.m. on Tuesday, April 23rd, in the Hotel Marion. E. M. Gray of Mountain Home was elected president of the club and J. H. McCurry was re-elected secretary.

# FINAL GENERAL SESSION 9:00 a.m., Tuesday, April 23rd, 1963 Lecture Hall, Robinson Auditorium

The final general session was called to order by James W. Branch, Third Vice President, at 9:00 a.m. on Tuesday, April 23rd. Scientific papers were presented as follows: "Etiological Factors of Psychosomatic Disease", by Sydney G. Margolin of Denver, Colorado; "The Infectious Vaginitides, Diagnosis and Treatment", by Herman L. Gardner, of Houston, Texas; "Rib Fractures and Their Complications", Ted F. Leigh of Atlanta, Georgia; and "Nasal Injuries, Cartilaginous and Bone", by Daniel D. Klaff of St. Louis, Missouri.



H. King Wade, Jr., president of the Arkansas Medical Society welcomed the Senior Medical Students and their guests to the Annual Dinner honoring the students. Senior Medical Dinner, Continental Room, Hotel Marion, April 21, 1963.

#### MEMORIAL SERVICE

#### 11:30 a.m., Tuesday, April 23rd 1963 Lecture Hall, Robinson Auditorium

President H. King Wade, Jr., presided at a Memorial Service honoring members who had passed away during the year. The invocation was given by Walter O'Neal of Little Rock.

Mrs. T. D. Brown, Auxiliary Chaplain, read the names of the deceased members of the Auxiliary:

Mrs. George Thompson, Little Rock Mrs. N. W. Riegler, Sr., Little Rock Mrs. J. P. Sheppard, Little Rock Mrs. S. P. Junkin, Little Rock Mrs. Thomas F. Dilday, Little Rock

President Wade read the names of the deceased members of the Society:

John H. Bohannan, Berryville, May 18, 1962 Hugh A. Browne, Alexander, November 15, 1962 Thomas E. Burgess, Little Rock, November 30, 1962 James W. Case, Jr., Walnut Ridge, January 7, 1963 Wm. L. Davis, Searcy, March 8, 1963 Hubert C. Dorsey, Coffeyville, Kansas, June 11, 1962 Andrew J. Harrison, Springdale, January 9, 1963 J. Harry Hayes, Sr., Little Rock, April 10, 1963 George A. Hughes, Siloam Springs, April 13, 1962 William T. Lowe, Pine Bluff, May 28, 1962 Daniel McCall, Lawson, August 30, 1961 A. C. Parker, Clarkdale, January 23, 1963 William F. Porter, Hot Springs, January 7, 1963 William K. Riley, North Little Rock, November 17, 1962 G. R. Siegel, Clarksville, April 14, 1963 Saul Sternberger, Jr., Lepanto, July 13, 1962 George D. Thompson, Little Rock, May 8, 1962 C. C. Townsend, Walnut Ridge, June 5, 1962 Peter J. Trinca, El Dorado, August 20, 1962 J. B. Wharton, Sr., El Dorado, June 21, 1962 N. F. Weny, North Little Rock, December 24, 1962 Charles P. Wickard, Little Rock, November 19, 1962 Jesse B. Woods, Little Rock, May 14, 1962

The Memorial Address was given by Payton Kolb of Little Rock as follows:

#### MEMORIAL ADDRESS

Feifel, in his essay, "Attitudes Toward Death", has said, "The democracy of death encompasses us all. Even before its actual arrival it is an absent presence. To deny or ignore distorts life's pattern." As we pass through each day we are conscious of the fact that our lives and the lives of our friends will eventually come to a point of termination. When we are confronted, however with the news of the passing of a colleague and friend, our reaction indicates sorrow and loss.

As we gather here to pay tribute to and to honor those who have left us during the past year, we are reminded of the regret over losing a friend, the fondness of a memory, and the inspiration of their lives of service. It is good that we stop to think and discuss their lives and ours in the light of these points.

As we think of those who have left us during this past year, we are aware that some of them were very close as husbands, wives, close friends, and relatives. Others, although not close in personal contact, are nevertheless close to us because of the sharing of endeavors, the same concern in the service of our fellow man, and the realization of having trod the same road together in the choice of the training and practice of the same arts and skills.

Kahlil Gibran, in his book, "The Prophet", expresses friendship in this manner:

And a youth said, Speak to us of Friendship. And he answered, saying:

Your friend is your needs answered.

He is your field which you sow with love and reap with thanksgiving.

And he is your board and your fireside.

For you come to him with your hunger, and you seek him for peace.

When your friend speaks his mind you fear not the "nay in your own mind, nor do you withhold the "ay."

And when he is silent your heart ceases not to listen to his heart;

For without words, in friendship, all thoughts, all desires, all expectations are born and shared, with joy that is unacclaimed.

When you part from your friend, you grieve not:

For that which you love most in him may be clearer in his absence, as the mountain to the climber is clearer from the plain.

And let there be no purpose in friendship save the deepening of the spirit.

For love that seeks aught but the disclosure of its own mystery is not love but a net cast forth; and only the unprofitable is caught.

And let your best be for your friend.

If he must know the ebb of your tide, let him know its flood also.

For what is your friend that you should seek him with hours to kill?

Seek him always with hours to live.

For it is his to fill your need, but not your emptiness.

And in the sweetness of friendship let there be laughter, and sharing of pleasures.

For in the dew of little things the heart finds its morning and is refreshed.



The new president, Joe Verser, was escorted to the rostrum by Mrs. Gordon P. Oates (left) and Mrs. Jack W. Kennedy. Mrs. Verser (left) and Mrs. Elvin Shuffield (right) observe the proceedings. Annual Banquet, Hotel Marion, April 23, 1963.

When we think back on these who have gone to rest, we observe that some lived long and fruitful lives with much service. We rejoice in this and explain our question about death with the revelation that God called them home for rest. On the other hand we are concerned with the question concerning those called home from that point of life that we would consider the peak of their service and those taken from us at the beginning of their service. We ask the question, Why?, and yet know there are many things we cannot answer or understand.

Again we turn to Gibran and quote "The Prophet" when he says the following:

Then Almitra spoke, saying, We would ask now of Death.

And he said:

You would know the secret of death.

But how shall you find it unless you seek it in the heart of life?

The owl whose night-bound eyes are blind unto

the day cannot unveil the mystery of light.

If you would indeed behold the spirit of death,
open your heart wide unto the body of life.

For life and death are one, even as the river
and the sea are one.

In the depth of your hopes and desires lies your silent knowledge of the beyond;

And like seeds dreaming beneath the snow your heart dreams of spring.

Trust the dreams, for in them is hidden the gate to eternity.

Your fear of death is but the trembling of the shepherd when he stands before the king whose hand is to be laid upon him in honour. Is the shepherd not joyful beneath his trembling, that he shall wear the mark of the king? Yet is he not more mindful of his trembling? For what is it to die but to stand naked in the wind and to melt into the sun?

And what is it to cease breathing, but to free the breath from its restless tides, that it may rise and expand and seek God unencumbered?

Only when you drink from the river of silence shall you indeed sing.

And when you have reached the mountain top, then you shall begin to climb.

And when the earth shall claim your limbs, then shall you truly dance.

At the time of the passing of a loved one or friend each of us may react differently, one retreating, one moving forward. There is, however, within us all the feeling of loss and immediately the empathy with those closest to the one who has left. It is our desire and our responsibility to offer hope, and this hope we find only in the trust of God and the promises He has made to us.

This hope is found in Paul's first letter to the Corinthians:

Now this I say, brethren, that flesh and blood cannot inherit the kingdom of God; neither doth corruption inherit incorruption.

Behold, I shew you a mystery; We shall not all sleep, but we shall all be changed.

In a momeut, in the twinkling of an eye, at the last trump; for the trumpet shall sound, and the dead shall be raised incorruptible, and shall be changed.

For this corruptible must put on incorruption, and this mortal must put on immortality.

So when this corruptible shall have put on incorruption, and this mortal shall have put on immortality, then shall be brought to pass the saying that is written. Death is swallowed up in victory.

O death, where is thy sting? O grave, where is thy victory?

The sting of death is sin; and the strength of sin is the law.

But thanks be to God, which giveth us the victory through our Lord Jesus Christ.

Therefore, my beloved brethren, be ye steadfast, unmoveable, always abounding in the work of the Lord, forasmuch as ye know that your labour is not in vain in the Lord.

There is a beautiful and challenging hymn that has as its opening line these words, "Are ye able, said the Master, to be crucified with me?" We look upon this challenge as the ultimate goal every man should seek. We all recognize our many failures and at the same time recognize the inspiration to answer this question in the positive.

We thrill to the many stories of heroism, even unto death, when men are challenged. I do not believe that it would be a disservice to great people in many other fields who have given their lives to the cause of service to God and their fellow man when we feel that only in the practice of medicine can we find so universal a sacrifice of time, energies, pleasures, desires, and even in many instances lives to service as is recorded in the history of medicine. It is then easy to memoralize these men and women today because we know of the high calling in which they served. The relief of the suffering patient has many facets, but that in itself is the common purpose that binds us together. These different facets, however, require some of us to work in areas in which the spotlight of public acclaim never reaches, while others are known far and wide. In the sight of God, however, neither is subservient to the other and each can reach a sense of satisfaction with his life in knowing his chief purpose is service to God and his fellow man.

It is at this time of memorial that all of these, our friends, are brought together in that bond of having finished a life of service. Carlyle has said, "One of the God-like things in this world is the veneration done to human worth by the hearts of men," and it is for this purpose we are gathered here today.

It would be a disservice to the memory of these we are honoring today if we did not think and be inspired by the lives they have led. Oliver Wendell Holmes has said, "As life is action and passion, it is required of a man that he should share the passion and action of his time at the peril of being judged not to have lived."

Where but in the practice of medicine and the relief of suffering can we share the passion and action of our time? Where but in this area is a man privileged to be so much a part of other men, the sharing of the most intimate details of a person's life, the fuller understanding of his inner drives and motives, and the great realization that we are all "our brother's keeper." As mortal beings we fail many times and many times we pass up our fallen brother. Certainly most of the times, however, we do not fail to be a part of our brother and his trouble. In all of these experiences the greatest joy of life comes in the realization that the physician is accepted anywhere by any group and that the physician and his family have the great privilege of knowing that all

men everywhere are brothers. This gives us the privilege of being with him in time of sorrow, in time of trouble, in time of joy, in time of combat, in time of peace, in time of disaster, and in time of reward.

Carl Jung in his treatise "The Soul and Death" has said, "Life is an energy process. Like every energy process it is in principal irreversible and is therefore unequivocably directed towards a goal. That goal is a state of rest. In the long run everything that happens is, as it were, nothing more than the initial disturbance of a perpetual state of rest which forever attempts to re-establish itself." Later in this same paper he states, "Like a projectile flying to its goal, life ends in death. Even its ascent and its zenith are only steps and means to this goal. This paradoxical formula is no more than a logical deduction from the fact that life strives towards a goal and is determined by an aim."

Paul Tillich states in his "The Eternal Now": "It is our destiny and the destiny of everything in our world that we must come to an end. Every end that we experience in nature and mankind says to us in a loud voice, 'You also will come to an End'." What then is death and what is its purpose? As these writers say, "Death is the end." Of its purpose, it has one, and that is to limit life.

This knowledge then gives us a goal for living. There are two philosophies that may come from

this goal. One is the philosophy of "Eat, drink, and be merry, for tomorrow may never come." The other philosophy is the one that there is much to do and little time to do it. The physician by the choice of his work makes clear his choice of a goal of service.

Ralph Waldo Emerson in his poem, "A Nation's Strength," has said:

"What makes a nation's pillars high And its foundations strong? What makes it mighty to defy The foes that round it throng?

It is not gold. Its kingdoms grand Go down in battle shock; Its shafts are laid on sinking sand Not on abiding rock.

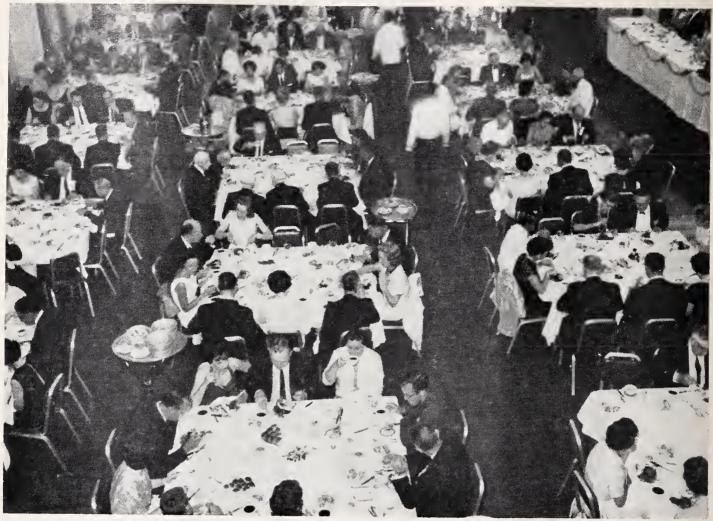
Is it the sword? Ask the red dust
Of empires passed away:
The blood has turned their stones to rust,
Their glory to decay.

And is it pride? Ah, that bright crown Has seemed to nations sweet;
But God has struck its luster down In ashes at his feet.

Not gold but only men can make



Most of the Senior Medical Students attended the annual Arkansas Medical Society-Arkansas Academy of General Practice dinner in their honor. Senior Medical Dinner, Continental Room, Hotel Marion, April 21, 1963.



The Annual President Installation Banquet and Dance was well attended. Annual Banquet, Hotel Marion, April 23, 1963.

A people great and strong; Men who for truth and honor's sake Stand fast and suffer long.

Brave men who work while others sleep, Who dare while others fly— They build a nation's pillars deep And lift them to the sky."

Certainly the physician and his family are part of the "men who make a people great and strong."

We are thankful that these we honor did live. We are thankful for what they meant for us, we are thankful for their allowing us to be a part of them, we are thankful for what they have meant to the kingdom of God. For their loss, we sorrow, and yet for the victory over death, we are grateful. May we be inspired by their lives to serve and to not fear, and know that when our time comes to join them, we can say with Paul, "I have fought a good fight, I have finished my course, I have kept the faith."

#### **DEATH**

Death, be not proud, though some have called thee

Mighty and dreadful, for thou are not so;

For those whom thou think'st thou dost overthrow

Die not, poor Death; nor yet canst thou kill me.
From rest and sleep, which but thy picture be,
Much pleasure; then from thee much more
must flow;

And soonest our best men with thee do go-Rest of their bones and souls' delivery!

Thou'rt slave to fate, chance, kings, and desperate men,

And dost with poison, war, and sickness swell;
And poppy or charms can make us sleep as well
And better than thy stroke. Why swell'st thou
then?

One short sleep past, we wake eternally,
And Death shall be no more: Death, thou shalt
die!

John Donne



The senior medical students and their wives or guests were greeted by officers of the Arkansas Medical Society and the Arkansas Academy of General Practice. Senior Medical Day Banquet, Continental Room, Hotel Maríon, April 21, 1963.

Following the Memorial Address, Mrs. Harold Hawley of Little Rock sang. Benediction was by Dr. O'Neal.

#### SPECIALTY SECTION MEETINGS Tuesday, April 23rd, 1963

There was no general session on Tuesday afternoon, April 23rd, 1962. Specialty section meetings were held as follows:

The Eye, Ear, Nose and Throat Section met in the Court Room of the Marion Hotel, beginning at 9:00 a.m. Speakers were Wesley McKinney of Memphis and Daniel D. Klaff of St. Louis.

Th Urology Section met in the West Room of the Hotel Marion for a luncheon and scientific session. Ian M. Thompson of Columbia, Missouri, was guest speaker.

The Section on Pediatrics met in the Continental Room of the Hotel Marion for a luncheon and afternoon scientific program with the following speakers: James L. Dennis of Little Rock; Betty A. Lowe of Texarkana, Thomas E. Townsend of Pine Bluff and Sheldon C. Siegel of Los Angeles.

The Surgical Section met in the Forum Room of the Hotel Marion for a luncheon and program presented by Richard Martin of Houston, Texas.

The Arkansas Academy of General Practice met in the Banquet Hall of the Hotel Marion. Gordon McHardy of New Orleans talked on "Current Status of Ulcer Therapy" and there were case presentations by members of the Academy with comments by Dr. McHardy.

The Radiology Section met in the Assembly Room of the Marion Hotel for a luncheon and business meeting. The afternoon scientific session consisted of a talk on "A New Approach to the Barium Enema" by Ted Leigh of Atlanta, Georgia, and a panel session on Radiology of the Mediastinum with Howard Barnhard as moderator and Ted Leigh, Bill Dave Stewart and S. Wm. Ross as members of the panel.

The Arkansas Obstetrical and Gynecological Society met in the Rendezvous Room of the Hotel Marion with Robert F. McCrary of Hot Springs, presiding. A luncheon and business meeting was followed by a scientific program. Herman L. Gardner of Houston discussed "Dystrophic

Lesions of the Vulva" and Michael Howett of Dallas discussed "Possible Application of Lymphography in Pelvic Cancer."

The Arkansas Psychiatric Society met at 1:00 p.m. in the East Room of the Hotel Marion with Sydney G. Margolin of Denver as guest speaker.

The Arkansas Society of Internal Medicine met in the Continental Private Dining Room of the Hotel Marion with George K. Mitchell of Little Rock as speaker.

#### ANNUAL PRESIDENT'S BANQUET AND DANCE Tuesday, April 23, 1963 Ballroom, Hotel Marion

The Annual President's Banquet was held in the Ballroom of the Hotel Marion. H. King Wade, Jr., president, presided and introduced the honor guests of the Society and the principal officers. During the dinner, Dr. Wade presented to Dean Shorey, on behalf of the American Medical Association Education and Research Foundation, a check in the amount of \$8,692.30 for the use of the University of Arkansas Medical Center. Grimsley Graham presented the golf prizes which had previously been donated by pharmaceutical and surgical houses and the Arkansas Blue Cross-Blue Shield. First three winners were: Ernest King of Russellville, H. L. Wineland of Pine Bluff, and E. H. Wilkes of Little Rock.

Dr. Wade introduced the past presidents in attendance and president-elect Joe Verser was escorted to the podium by Mrs. Gordon P. Oates of Little Rock and Mrs. Jack W. Kennedy of Arkadelphia, members of the Auxiliary. Dr.

Wade administered the oath of office to Dr. Verser, installing him as president of the Arkansas Medical Society.

Dr. Verser presented Dr. Wade a plaque commemorating his year of service as president of the Arkansas Medical Society and expressing the Society's appreciation for Dr. Wade's devotion to the causes of medicine and interest of the patient.

Dr. Verser, introduced his wife, his mother Mrs. W. W. Verser, his son Joe William Verser, and his sister and brother-in-law, Mr. and Mrs. Waddle of Harrisburg. He accepted the office with his thanks to all of the members of the Arkansas Medical Society and a plea to participate in Medical Society affairs and in civic affairs.

#### PAST PRESIDENT'S BREAKFAST

The past presidents of the Arkansas Medical Society met for breakfast at 7:30 a.m. on Wednesday in the Arlington Hotel.

## FINAL MEETING HOUSE OF DELEGATES

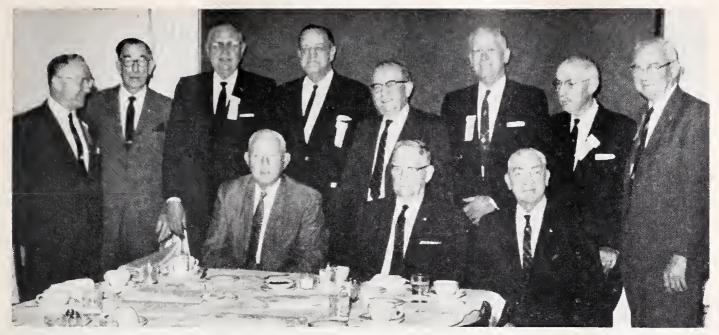
#### 10:00 a.m. Wednesday, April 24th, 1963 Lecture Hall, Robinson Auditorium

Speaker C. Lewis Hyatt called the House of Delegates to order at 10:00 a.m. on Wednesday, April 24th, 1963, in the Lecture Hall of the Robinson Auditorium. He requested W. Payton Kolb of Little Rock to give the invocation.

Secretary Elvin Shuffield called the roll of delegates. The following delegates and members seated as delegates by action of the House were present:



The Fifty Year Club Breakfast was held on Tuesday morning. E. M. Gray was elected President and J. H. McCurry is secretary-treasurer. Fifty Year Club Breakfast, Hotel Marion, April 23, 1963.



The Past Presidents' Breakfast was held on Wednesday. Standing (left to right) are: T. Duel Brown, H. Fay H. Jones, Euclid Smith, J. J. Monfort, James M. Kolb, William A. Snodgrass, Louis K. Hundley. Scated (left to right) Joe F. Shuffield, O. J. T. Johnston, W. H. Mock. Past Presidents' Breakfast, Hotel Marion, April 24, 1963.

ARKANSAS, R. H. Whitehead, Sr.; BAXTER, John F. Guenthner; BOONE, Henry V. Kirby; BRADLEY, George F. Wynne; CLARK, Eli Gary; CLEBURNE, W. M. Wells; CRAIGHEAD-POINSETT, Glen Keller, Vestal B. Smith, J. H. McCurry; DESHA, J. H. Hellums; DREW, C. Lewis Hyatt; FRANKLIN, David L. Gibbons; GARLAND, John W. Dodson, Ronald J. Bracken; GREENE-CLAY, A. E. Andrews; HEMPSTEAD, Lynn Harris; HOT SPRING, C. Randolph Ellis; INDEPENDENCE, J. J. Monfort; JEF-FERSON, T. E. Townsend, Louis Hundley; JOHNSON, Guy Shrigley; LAWRENCE, Ralph Joseph; LEE, Dwight W. Gray; MILLER, Karlton H. Kemp; NEVADA, Charles Hesterly; POLK, Calvin Austin; POPE-YELL, Douglas Lowrey; PULASKI, Robert Watson, John McC. Smith, Edgar Easley, Thomas Jansen, Amail Chudy, T. D. Brown, Joe B. Scruggs, Hal Black, Jim Morrison; SE-BASTIAN, Murphey Henry, Louise Henry; SEVIER, Eugene Joseph; UNION, J. O. Cooper, Berry Moore, Jr.; WASHINGTON, James Mashburn, Donald B. Baker; COUNCILORS, Eldon Fairley, Hugh Edwards, Paul Gray, T. E. Townsend, H. W. Thomas, George Burton, John Wood, Karlton Kemp; J. W. Kennedy, Ross Fowler, Stanley Applegate, L. A. Whittaker, C. C. Long; OFFICERS, Joe Verser, C. Lewis Hyatt, J. P. Price, Elvin Shuffield, Treasurer Saltzman; PAST PRESIDENTS H. King Wade, Jr., Wm. A. Snodgrass, Jr., James M. Kolb, Sr., Louis K. Hundley, W. R. Brooksher.

George Wynne, chairman of the Credentials Committee, reported that a quorum was present.

James M. Kolb, Chairman of the Nominating Committee, presented the following report:

The Nominating Committee submits the following nominations for officers for the ensuing year:

FOR PRESIDENT-ELECT:
C. R. Ellis, Malvern and Miles Kelly, Sheridan
FOR FIRST VICE PRESIDENT:
Guy R. Farris, Little Rock

FOR SECOND VICE PRESIDENT:
A. E. Andrews, Paragould
FOR THIRD VICE PRESIDENT:
W. A. Fowler, Fayetteville
FOR TREASURER:
Ben N. Saltzman, Mountain Home
FOR SECRETARY:
H. Elvin Shuffield, Little Rock
FOR SPEAKER OF THE HOUSE OF DELEGATES:
C. Lewis Hyatt, Monticello
FOR VICE SPEAKER OF THE HOUSE OF DELEGATES:
John Porter Price, Monticello
FOR COUNCILORS:

First District—Eldon Fairley, Osceola
Second District—Paul Gray, Batesville
Third District—Paul Millar, Stuttgart
Fourth District—T. E. Townsend, Pine Bluff
Fifth District—George Burton, El Dorado
Sixth District—Karlton Kemp, Texarkana
Seventh District—Jack W. Kennedy, Arkadelphia
Eighth District—William Payton Kolb, Little Rock
Ninth District—Stanley Applegate, Springdale
Tenth District—C. C. Long, Ozark
or Delegate to the American Medical Associate

For Delegate to the American Medical Association (1-1-64/12-31-65), Jack W. Kennedy, Arkadelphia For Alternate Delegate to the American Medical Association (1-1-64/12-31-65), Alfred Kahn, Jr., Little Rock

Upon motion of Dr. Kolb, the report of the Nominating Committee was accepted as read.

Upon motion of Charles Hesterly and T. D. Brown, the House unanimously elected the proposed slate of officers with the exception of the nominees for president-elect.

J. W. Kennedy advised that he had been instructed by Miles Kelley to request that his name be withdrawn and moved that C. R. Ellis be unanimously elected to the office of president-elect. Motion carried.



The officers of the Arkansas Medical Society for 1963-1964. Standing, (left to right) Councilors Paul Gray, L. A. Whittaker, W. Payton Kolb, Eldon Fairley, Karlton Kemp, John Wood, Stanley Applegate, Jack Kennedy, Hugh Edwards, C. C. Long, Legal Counsel Eugene R. Warren, Past President James M. Kolb, Councilor T. E. Townsend, Past President H. King Wade, Jr. Seated, (left to right), Councilors George Burton, Ross Fowler, Secretary H. Elvin Shuffield, President elect C. R. Ellis, Chairman of the Council H. W. Thomas, President Joe Verser, Treasurer Ben N. Saltzman, and Speaker of the House C. Lewis Hyatt. Not present were: First Vice President Guy R. Farris, Second Vice President A. E. Andrews, Third Vice President W. A. Fowler, Vice Speaker of the House J. P. Price, Journal Editor Alfred Kahn, Councilors Paul Ledbetter, G. A. Sexton, Paul Millar, John L. Ruff, Martin Eisele, Joseph Norton.

Speaker Hyatt asked Past President T. D. Brown and John F. Guenthner to escort the new president-elect to the rostrum. Dr. Ellis briefly thanked the House of Delegates for selecting him for the office.

Speaker Hyatt called for the report of Reference Committee Number One. Louis K. Hundley, chairman of the Committee, presented the report as follows:

## REPORT OF REFERENCE COMMITTEE NUMBER ONE

Reference Committee Number One met at 10:00 a.m. in the Rendezvous Room of the Hotel Marion on Monday, April 22nd, and considered the reports assigned to it.

Report of Committee on Public Health—received and noted, Report of the Sub-Committee on Rural Health—We commend this Committee for its participation in the Rural Community Improvement Programs over the State and feel that this activity should be continued.

We urge the members of the Society to participate in the National Rural Health Conference to be held in Hot Springs, Sept. 20-21st. We commend the Committee for procuring this conference.

Sub-Committee on Postgraduate Education-We commend

this committee for the fine program in which 228 physicians participated and earned 861 hours of credit during the school year. We feel that this program should be continued and enlarged.

Committee on Hospitals—This committee has suggested that the Arkansas Medical Society's annual convention and the convention of hospital administrators overlap in such a way that a joint session could be held. We suggest that this be studied by the Council for implementation.

This committee should work toward assisting the Medical Center in opening the remaining hospital beds at the University Hospital.

Sub-Committee on Tuberculosis—We wish to commend this committee and approve their recommendations. We urge the medical profession to cooperate in mass skin testing programs only if adequate follow-up is available and adequate records are kept.

Sub-Committee on Mental Health—This committee is commended for its work with this increasingly important program. Their suggestions for seminars for general practitioners in psychiatric technics should be implemented by conferring with the Sub-Committee on Postgraduate Education. We also suggest that a state-wide conference on Mental Health be sponsored by the Society, providing the committee will work up a program and submit it to the Council for approval. We recommend that the size of the committee be enlarged by the president to 7 or 9 members.

Sub-Committee on Liaison with the State Board of Health— Report received and committee commended for its work. Polio Advisory Committee—This committee report was received and approved. The committee is urged to continue the program of mass immunizations with the Sabin vaccine.

Committee on Insurance—The report received and approved and this committee is commended for its activities. We call attention of the committee that the Council at its December meeting directed this committee in conjunction with the Executive Secretary to study insurance programs to fit in with retirement plans under the Jenkins-Keogh Act.

Budget Committee—The report of this committee is received and approved as amended by the Council.

Senior Medical Day Committee—Approved the report and commended the committee on its fine program.

Report of Executive Secretary—The report approved and the staff is commended for its excellent work.

Report of Council-The report is received and approved.

Committee on Medical Legislation — The report received and the committee is commended for an excellent job. We suggest that the medical consultation room for the State Legislature in regular and special sessions be maintained on a permanent basis with voluntary participation of physicians. We also suggest that the committee on national legislation be asked to study the possibilities of changing the Keogh Act to increase physician participation.

Upon motion of Hundley and Wade, the report was approved and adopted by the House.

William A. Snodgrass, Jr., Chairman of Refer-

ence Committee Number Two, submitted the following report:

### REPORT OF REFERENCE COMMITTEE NUMBER TWO

Reference Committee No. 2 met at 2:00 p.m. April 22nd in the East Room of the Hotel Marion. Those present were Wm. A. Snodgrass, Jr., Chairman, Julius Hellums, and Guy Shrigley, composing the committee. Guests meeting with the committee were Dr. Mashburn and Dr. Henry of Fayetteville, Drs. Henry of Fort Smith, Dr. John Herron of the Arkansas State Board of Health and Dr. Berry Moore, Jr., of El Dorado, and Mr. Paul Harris, Executive Secretary of the Pulaski County Medical Society.

The Committee rapidly reviewed the committee reports submitted and accepted the following as submitted:

Committee on Medical Education
Sub-Committee on Maternal and Child Welfare
Sub-Committee on Liaison with Blue Cross-Blue Shield
Committee on Public Relations
Sub-Committee on Liaison with the Auxiliary
Advisory Committee to the Medical Assistants Society
Committee on Annual Session Arrangements—the commit-



The Receiving Line for the Annual Senior Medical Day Dinner formed early. Continental Room, Hotel Marion, April 21, 1963.



"Sing Along with Betty" was enjoyed by all who attended the Cocktail Party. Hotel Marion, April 22, 1963.

tee commends the fine program and work of this committee

Committee on Aging

Committee on Traffic Safety

Liaison Committee with Vocational Rehabilitation Liaison Committee with State Welfare Department

Advisory Committee to Selective Service System

First, Second, Third, Fourth, Sixth, Seventh, Eighth and Tenth Councilor District Professional Relations Committees—it was noted that several of these committees were called upon to mediate problems that arose in their districts. These were amicably settled to everyone's satisfaction.

Report of the Arkansas State Medical Board Report of the Arkansas State Board of Health AMA Delegate's report

Resolution on Individual Responsibility Plan was handed to this committee after publishing of the committee reports. Dr. Berry Moore, Jr., presented this to the committee and after much discussion it was the opinion of the committee that the plan was worthy of some further study and that it be assigned to the proper committee for study and recommendation to the next session of the Arkansas Medical Society.

The committee wishes to express appreciation for the work done by these committees but to go into them individually would require a much longer report. They were all excellent and we know they will continue to carry on their good work during the coming year.

Upon the motion of Snodgrass and Kemp, the

report was approved and adopted by the House.

H. W. Thomas presented the following report of the Council meetings held during the convention:

### REPORT OF COUNCIL

The Council met on Sunday, April 21st, and transacted the following business:

Approved the following applications for affiliate membership:

### Retirement

A. J. Souter
H. K. Carrington
Shelby Atkinson
W. M. McRae
James D. Hayes
Frances Rothert
Byron Bennett
A. M. Washburn
Glenn Johnson
H. A. Murphy
James R. Williams
W. H. Bruce
Arthur Fowler, Jr.
Virgil Payne

H. L. Boyer
Joseph Delaney
W. A. Fowler
Allan Gilbert
J. H. Downs
M. C. Crandall
A. V. Adams
Hugh M. Fogo
Howard Rands
J. H. Scroggin
E. J. Brown
George B. Alcott
D. A. Dickerson

### Disability

Evelyn R. Jones Bryce Cummins J. D. Riley

### Military Service

Wayne B. Glenn

S. T. W. Cull Ralph A. Law

B. D. Luck

Victor Ferrari

### **Residency Training**

John P. Thompson
H. K. Baldridge
R. H. Whitehead, Jr.
H. Jennings Douglass
James M. Kolb, Jr.
A. E. Thorne

Marvin L. Murphy
Charles G. Pearce
R. H. Harrison
Paul N. Means
W. E. Harville

- 2. Approved life membership for Jesse S. Spillyards and Jesse T. Wood.
- 3. Heard a report of the Constitutional Revision Committee recommending changes in the Constitution and By-Laws which would (1) make it possible for interns and residents to be granted affiliate membership without having previously been a dues-paying member, and (2) establish a sub-committee on national legislation as a standing committee of the Society.
- Approved the following report of the Internship Committee:
  - "The Internship Committee of the Arkansas Medical Society has met twice and the following report and opinion are presented to the Council.
  - (1) The University of Arkansas Medical Center was built and is being supported by the State for the purpose of supplying doctors for the State of Arkansas. At the present time and in the foreseeable future, a large percentage of the graduates of this school should go into general practice to fulfill this need. We feel that if this is to take place, it will be necessary for as many graduates as possible to take a general rotating internship in this State.
  - (2) We recommend that the faculty at the School of Medicine give preferential encouragement to all

- approved general internships in the state and try to help fill them.
- (3) That the Medical Center strive to keep the number in specialty training and in General Internship in proportion to the needs of this State.
- (4) That the Medical Center give consideration to the wealth of teaching material present in private hospitals in the Little Rock area and to try to work out some program for the utilization of this material in their resident training program.
- Nominated Dr. T. E. Townsend as the Arkansas Medical Society representative to the Public Health Association.
- 6. Received and filed resolutions presented by the Washington County Medical Society on medical ethics and on operation of the Kerr-Mills program.
- 7. Directed the Executive Committee of the Council to appoint a delegate to the Advisory Council on Accreditation of the Arkansas Nursing Home Association.
- -8. Approved an amendment to the Medicare Contract permitting care under the Program of dependents of North Atlantic Treaty Organization military personnel in the United States.
- 9. Appointed a resolutions committee composed of Alfred Kahn, Paul Millar, and Randolph Ellis.
- 10. Authorized Dr. Alan Cazort, chairman of the Arkansas State Arbitration Commission, to negotiate with the State Authority on the interpretation of Rule 21 of the Workmen's Compensation Commission.
- 11. Voted to commend Mrs. C. C. Long for her excellent exhibit demonstrating the destruction of freedom of people in all trades and professions in this country.

The Council met on April 22nd and transacted



The Head Table and the Ballroom of the Hotel Marion were tastefully decorated by the Auxiliary. Annual Banquet, Hotel Marion, April 23, 1963.



The commercial exhibitors enjoyed good traffic in the Robinson Auditorium.

### business as follows:

- Introduced Dr. Flora, the new superintendent of McRae Sanatorium and heard a brief report of progress at the Sanatorium.
- 2. Approved the Public Health Department policy of showing a film on external cardiac massage to lay groups only with supervision.
- 3. Heard a report by Mr. Schaefer on his study of the Keogh Law for setting up retirement systems for physicians and approved his recommendation that the Society postpone participation pending further developments and instructed Mr. Schaefer to keep the Council advised of further developments with a view to developing a plan for members as individuals or as a Society group.

The Council met on April 23rd and conducted the following business:

- 1. Viewed the AMA film "Operation Hometown" outlining a program of action to defend the medical profession against current plans to establish a social security system of medical care.
- 2. Heard Dr. Joseph Norton report on a national legislative meeting held in Chicago by the AMA on April 20-21. The Council approved the outline of action presented by Dr. Norton as chairman of the newly created Committee on National Legislation.
- 3. Received the following resolution as adopted by the Arkansas Council of Retail Merchants opposing the King-Anderson Bill:

"The Arkansas Council of Retail Merchants expresses opposition to legislation HR 3920 and S880 providing for medical care and hospitalization for the aged to be financed from an increase in social security taxes.

It is felt that such legislation would be providing health care for people without regard to need, since many people eligible for social security are financially able to provide their own health services.

The organization favors legislation along the lines of the Kerr-Mills Program in providing medical care and aid for our senior citizens who are unable to afford the same.

The Council favors also removal of restrictions on combined action of private insurance companies as an arm of free enterprise to extend coverage as needed to all strata of population."

It was voted to request the resolutions committee to present a resolution thanking the Arkansas Council of Retail Merchants for their action.

4. Voted to increase the Auxiliary allowance for annual session expenses from the present \$200 to \$300.

The Council met on April 24th and conducted the following business:

- I. The Council heard discussion by Hundley, Burton, Whittaker, and others regarding the bill in Congress for Federal Aid to Medical Education and especially its application to Optometry. After discussion of several resolutions and amendments, the Council voted 14 to 3 to table the resolutions and all amendments. No further action was taken on Federal Aid to Medical Education.
- II. The Council received with appreciation the following resolution adopted by the General Assembly of the State of Arkansas, thanking the

Medical Society for furnishing medical care during the 64th General Assembly:

"Whereas, the Arkansas Medical Society has made doctors and nurses available during the 64th General Assembly, who are present at the State Capitol Building for treatment of the members of the General Assembly who may become ill, and

Whereas, the University Medical Center has cooperated in this effort by assisting in the recruiting of nursing personnel and in furnishing equipment, and

Whereas, each member of the Senate is comforted by the presence of such medical and nursing services, and

Whereas, such services have been unselfishly donated as a public service in connection with the 64th General Assembly,

Now Therefore Be It Resolved by the Senate of the 64th General Assembly of the State of Arkansas, the House of Representatives Concurring therein,

That the Senate and House hereby express their sincerest appreciation, and commend the Arkansas Medical Society and the State Medical Center for making available doctors and murses who have been present during each day the 64th General Assembly has been in session to render medical and nursing care to members who may become ill during the legislative session.

Be It Further Resolved that a copy of this Resolution shall be furnished, by the Secretary of the Senate, to the President of the Arkansas Medical Society and to the Vice-President of Health Sciences of the State Medical Center."

Upon motion of Thomas, the supplementary report of the Council was approved as read.

In the absence of Alfred Kahn, chairman of the Resolutions Committee, the following resolutions were presented by C. R. Ellis, a member of the committee:

### **APPRECIATION**

WHEREAS, the Arkansas Medical Society received courteous, careful and fair consideration from the Press, the Radio and Television, during our sessions, and their cooperation has done much to make our 87th Annual Session a success, and

WHEREAS, the management of the Marion Hotel has facilitated our efforts in every way, as have those in charge of the Robinson Auditorium, where most of our sessions have been held, and

WHEREAS, the Pulaski County Society, and

the individual members thereof, and particularly the ladies' committees, have been gracious hosts, and have contributed greatly to our enjoyment, and

WHEREAS, the North Little Rock physicians and their wives provided excellent hospitality by hosting the reception at the Top of the Rock on Sunday evening, and

WHEREAS, the North Hills Country Club has been most generous in making its golf course available for the Golf Tournament, and

WHEREAS, distinguished guests from beyond our borders, who have appeared on our program, have added very greatly to the worth of our meeting, and we have benefited from the lessons which they have shared with us, and

WHEREAS, the hours of thought devoted by the Committee on Arrangements for the Annual Session have been greatly rewarding, and have borne fruit in a program of outstanding worth, and

WHEREAS, Dean Shorey of the Medical Center, and its faculty, have cooperated fully with us in presenting the closed circuit television program and in furnishing projectors and personnel to operate them, and

WHEREAS, study and other effort was given by our technical exhibitors, resulting in exhibits that have been instructive, and they were greatly enjoyed, and

WHEREAS, the commercial exhibitors were of great benefit to our gatherings and the courteous and careful attention of the attendants was quite helpful,

NOW, THEREFORE, BE IT RESOLVED that the Arkansas Medical Society record its sincere appreciation, and expresses its heartfelt thanks to our host city, and those heretofore mentioned, for the cordial welcome, the extension of unbounded hospitality, the expression of good will and kindly feelings shown each member of the Society, who have been privileged to attend this session. We shall ever hold in pleasant memory the hours spent as their guests during the last several days.

### STATION KATV

WHEREAS, the 87th Annual Session of the Arkansas Medical Society just completed in Little Rock has been an outstanding success, and

WHEREAS, television station KATV was most helpful in presenting the teaching conference via closed circuit television from the Medical Center, BE IT RESOLVED, that the House of Delegates express its thanks for the Medical Society to television station KATV.

### ARKANSAS COUNCIL OF RETAIL MERCHANTS

WHEREAS, the Arkansas Council of Retail Merchants extended to us with the Council a resolution expressing opposition to the social security approach to the care of the aged, and

WHEREAS, we appreciate and must have the support of other groups in our opposition to government encroachment on private enterprise,

NOW, THEREFORE, BE IT RESOLVED that this House of Delegates express its sincere appreciation to the Arkansas Council of Retail Merchants and request their permission to send copies of both these resolutions to all members of the House Ways and Means Committee and all members of the Arkansas delegation in Congress.

Upon motion of Ellis and Snodgrass, all resolutions were unanimously adopted by the House.

The House approved the following nominations for positions on the Arkansas State Board of Health:

First District: Charles G. Swingle, Marked Tree; F. E.

Utley, Blytheville; Frank Rhodes,

Osceoła

Third District: John W. Dorman, Springdale, Friedman

Sisco, Springdale, L. A. Whittaker. Fort

Smith

Fourth District: Warren S. Riley, El Dorado; Charles A.

Hesterly, Prescott; William S. Rain-

water, Él Dorado

Sixth District: C. Lewis Hyatt. Monticello; C. Ran-

dolph Ellis, Malvern; Thomas C. Wil-

son, Dermott

Member-at-Large: D. W. Goldstein, Fort Smith; Karlton

Kemp, Texarkana, Henry V. Kirby,

Harrison

Chairman of the Constitutional Revisions Committee, Louis K. Hundley, presented the following two proposed amendments to the Constitution, neither of which had originated in the committee. These proposals will be published twice during the coming year and will be voted on at the next Annual Session.

Article V of the Constitution

Amend so as to insert the word "treasurer" after the word secretary in line 4 thereof. (makes the treasurer a member of the House of Delegates)

Article VI of the Constitution

Amend so as to insert the words "the two delegates to the American Medical Association" after the word treasurer in line two thereof. (makes the two delegates to AMA members of the Council)

John W. Dodson of Garland County requested the permission of the House to discuss an item of new business. Upon a show of hands, there was opposition to the introduction of the new business and Dr. Dodson was advised that it could not be presented at that time. Speaker Hyatt suggested that the matter be referred to the Council for consideration.

Berry Moore, Jr. of Union County moved that the nomination for the Board of Trustees of Blue Cross-Blue Shield be reconsidered. Second by Jack Kennedy. The vote for reconsideration was 22 for and 22 against. The Speaker voted against the motion and declared that the matter would not be reconsidered.

Speaker Hyatt requested motion and discussion regarding meeting place for the 1965 Annual Session. Elvin Shuffield, speaking for the Pulaski County Medical Society, invited the Society to Little Rock for the 1965 meeting. The House unanimously accepted the invitation.

The House adjourned at 11:00 a.m.

### REGISTRATION 87th Annual Session of the Arkansas Medical Society

Physicians	430
Auxiliary	10
Medical Assistants, Nurses, Technicians	19
Medical Students	115
Scientific Exhibitors	16
Commercial Exhibitors	120
Other guests	48
TOTAL	

### OFFICERS OF THE ARKANSAS MEDICAL SOCIETY 1963-1964

President	_Joe Verser, Harrisburg
President-elect	C. Randolph Ellis, Malvern
First Vice President	Guy R. Farris, 810 West Second Street, Little Rock
Second Vice President	A. E. Andrews, Paragould
Third Vice President	W. A. Fowler, 301 West Mountain, Fayetteville
Secretary	Elvin Shuffield, Donaghey Building, Little Rock
Secretary Emeritus	W. R. Brooksher, 318 North Greenwood, Fort Smith
Treasurer	Ben N. Saltzman, Mountain Home
Speaker, House of Delegates	_C. Lewis Hyatt, Monticello
Vice Speaker of House	John P. Price, Monticello
Journal Editor	Alfred Kahn, Jr., 1300 West Sixth, Little Rock
Delegates to AMA	James M. Kolb, Clarksville; Jack Kennedy, Arkadelphia
Alternate Delegates to AMA	C. C. Long. Ozark; Alfred Kahn, Jr., Little Rock
Executive Secretary	Mr. Paul C. Schaefer, P.O. Box 1345, Fort Smith

### EXECUTIVE COMMITTEE OF THE COUNCIL

Chairman of the Council	H. W. Thomas, Dermott
President	Joe Verser, Harrisburg
President-elect	
Secretary	Elvin Shuffield, Donaghey Building, Little Rock

### COUNCILORS

Dis- trict	Councilor Term Expires '64	Councilor Term Expires '65	Counties in District
1.	Paul Ledbetter Jonesboro	Eldon Fairley Osceola	Clay, Craighead, Crittenden, Fulton, Greene, Lawrence, Mississippi, Poinsett, Randolph, and Sharp
2.	Hugh R. Edwards Searcy	Paul Gray Batesville	Cleburne, Conway, Faulkner, Independence, Izard, Jackson, Stone, and White
3.	G. A. Sexton Forrest City	Paul Millar Stuttgart	Arkansas, Cross, Lee, Lonoke, Monroe, Phillips, Prairie, St. Francis, and Woodruff
4.	H. W. Thomas Dermott	T. E. Townsend 1310 Cherry Pine Bluff	Ashley, Chicot, Desha, Drew, Jefferson, and Lincoln
5.	John L. Ruff Magnolia	George C. Burton Med. Arts Bldg. El Dorado	Bradley, Calhoun, Cleveland, Columbia, Dallas, Ouachita, and Union
6.	John P. Wood Mena	Karlton H, Kemp 408 Hazel Texarkana	Hempstead, Howard, LaFayette, Little River, Miller, Nevada, Pike, Polk, and Sevier
7.	Martin Eisele 101 Whittington Hot Springs	Jack Kennedy Arkadelphia	Clark. Garland, Grant, Hot Spring. Montgomery, and Saline
8.	Joseph A. Norton 5408 Centerwood Little Rock	Wm. Payton Kolb Med. Arts Bldg. Little Rock	Pulaski
9.	Ross Fowler Harrison	Stanley Applegate Springdale	Baxter, Benton, Boone, Carroll, Madison, Marion, Newton, Searcy, Van Buren, and Washington
10.	L. A. Whittaker 621 South 21st Fort Smith	C. C. Long Ozark	Crawford, Franklin, Johnson, Logan, Perry, Pope, Scott, Sebastian, and Yell

COV	AMITTE	E S
<b>ARKANSAS</b>	MEDICAL	SOCIETY
19	963-1964	

	Term
	Expire
COMMITTEE ON CANCER CONTROL	
Bill Dave Stewart, Waldon Building,	
Little Rock, Chairmau	1964
Joe B. Scruggs, Jr., Baptist Hospital,	
Little Rock	
Holden C. McCraney, 100 South 14th, Fort Smith	
Howard S. Stern, 1315 Linden, Pine Bluff	
Martin Eisele, 101 Whittington, Hot Springs	
Edward M. Cooper, 403 E. Matthews, Jonesbord	1966
Glenn P. Schoettle, West Memphis	1966
COMMITTEE ON MEDICAL LEGISLATION	
T. Duel Brown, 1120 Marshall, Little Rock	1964
Charles G. Swingle, Marked Tree	
H. C. Barnett, Jonesboro	
J. P. Ellis, 430 South West Avenue, El Dorado	
Morriss M. Henry, 35 North Block, Fayetteville	
John W. Smith, 1415 West 6th, Little Rock	
H. Elvin Shuffield, Donaghey Bldg.,	
Little Rock, Chairman	1966
	1966
P	
COMMITTEE ON DEPORTS AND ALTERY	
COMMITTEE ON PUBLIC HEALTH	
(Rural Health)	.001
George F. Wynne, Warren	1964
Edgar J. Easley, State Health Department,	1004
Little Rock	
Joe W. Reid, Arkadelphia Dwight Gray, Marianna	
Ben N. Saltzman, Mountain Home, Chairman	
Vestal B. Smith, Marked Tree	
vestal B. Smith, Marked Tree	1 900
SUB-COMMITTEE ON MATERNAL AND	
CHILD WELFARE	
Thomas E. Townsend, 1310 Cherry, Pine Bluff	f1964
A. K. Busby, Monticello	1965
J. Travis Crews, 4316 West Markham,	
Little Rock	1966
COMMITTEE ON MEDICAL EDUCATION	
COMMITTEE ON MEDICAL EDUCATION	1004
C. C. Long, Ozark, Chairman  Calvin Dillaha, Waldon Building, Little Rock	1964
Wm. R. Mashburn, 1315 Central, Hot Springs	1065
Charles Hesterly, Prescott	
W. H. Calaway, North Arkansas Clinic,	1903
Batesville	1966
James W. Hawley, Camden	1966
Justine 1, 224 110), Callidell	1500
SUB-COMMITTEE ON POSTGRADUATE	
EDUCATION	
Albert R. Hammon, Harrison	1964
Solon McGaughey, Paragould	1965
George F. Wynne, Warren, Chairman	1966
COMMITTEE ON HOSPITALS	
Rodger Dickinson, DeQueen	1964
Amail Chudy, 1703 Main, North Little Rock	
Chairman	
John Price, Monticello	
John V. Busby, 5008 Kavanaugh, Little Rock	
M. H. Harris, 3rd and Hazel, Newport	1966
Wright Hawkins, 100 South 14th Street, Fort Smith	1066
I VIL OHITCH	1900

	Term
	Expire
SUB-COMMITTEE ON LIAISON WITH	
BLUE CROSS-BLUE SHIELD	1064
John Laurens, 501 North Hayes, Little Rock Thomas E. Townsend, 1310 Cherry, Pine Bluff	1064
Joseph A. Buchman, 1302 West 6th, Little Rock	
Thomas M. Durham, Jr., 236 Central,	1303
Hot Springs	1965
A. S. Koenig, 922 Lexington, Fort Smith,	
Chairmau	1966
Tandy G. Morris, 505 East Matthews, Jonesboro	1966
COMMITTEE ON PUBLIC RELATIONS	1004
John McC. Smith, 4000 Woodlawn, Little Rock V. Bryan Perry, 1019 Cherry, Pine Bluff	
Lee Parker, Jr., McGehee	
Karlton Kemp, 408 Hazel, Texarkana	
A. E. Andrews, Paragould	
Garland Murphy, Jr., 304 East Peach, El Dorado.	
SUB-COMMITTEE ON INDUSTRIAL HEALTH	I
John G. Watkins, Jr., Donaghey Building,	1004
Little RockJack W. Kennedy, Arkadelphia	
John W. Cole, Malvern	
James Guthrie, 530 Jefferson St., S.W., Camden	1965
William L. Steele, 5520 West Markham,	
Little Rock, Chairman	1966
John D. Olson, 1500 Dodson, Fort Smith	
SUB-COMMITTEE ON TUBERCULOSIS	2004
Richard V. Ebert, Medical Center, Little Rock	
Sanford C. Monroe, 1421 Cherry, Pine Bluff Ben N. Saltzman, Mountain Home	
William O. Arnold, 236 Central, Hot Springs	
Harley C. Darnall, 500 Lexington, Fort Smith,	1000
Chairman	1966
Wayne W. Flora, Box 123, Alexander	1966
SUB-COMMITTEE ON MENTAL HEALTH	
W. O. Young, 112½ East 7th,  Little Rock, Chairman	1064
Henry M. Sims, 608 North Greenwood,	1501
Fort Smith	1964
George W. Jackson, Arkansas State Hospital,	
Little Rock	
John H. Delamore, Fordyce	1965
W. Payton Kolb, Baptist Medical Arts Bldg.,	1000
Little Rock	1966
Julian L. Foster, 3901 New Benton Highway, Little Rock	1966
Little Rock	1300
SUB-COMMITTEE ON LIAISON WITH THE	
STATE BOARD OF HEALTH	
Harold B. Hawley, 8818 Fourche Road,	1001
Little Rock	1964
C. Lewis Hyatt, Monticello, ChairmanHugh R. Edwards, Searcy	1966
riugii R. Edwards, Searcy	1500
POLIO ADVISORY SUB-COMMITTEE	
G. Max Thorn, 4117 Ark-Mo Highway,	
North Little Rock	
Eli Gary, Arkadelphia	_1964
Henry B. Rogers, 516 West Faulkner, El Dorado	1965
Roger B. Bost, 1400 South "D", Fort Smith, Chairman	1965
T. E. Townsend, 1310 Cherry, Pine Bluff	
C. E. Kemp, Jonesboro	
A 0	

Term	Tennice.
Expires: SUB-COMMITTEE ON STATE HEALTH AND	Expires: SUB-COMMITTEE ON PHYSICAL FITNESS AND
MEDICAL RESOURCES FOR CITIL DEFENSE	SCHOOL HEALTH
Keller Lieblong, Conway 1964	Earle D. McKelvey, Paragould1964
Charles F. Wells, Morrilton, Chairman	J. Clyde Hart, Jr., 1310 Cherry,
James A. Johnson, 112 North Bailey, Jacksonville 1966	Pine Bluff, Chairman1965
James A. Johnson, 112 Porti Dancy, Jackson The 22200	Jack W. Kennedy, Arkadelphia 1966
SUB-COMMITTEE ON LIAISON WITH AUXILIARY	
Joe Verser, Harrisburg, Chairman1964	LIAISON COMMITTEE WITH VOCATIONAL
C. C. Long, Ozark1964	REHABILITATION
Glen Keller, University Center, Jonesboro1964	James W. Hawley, Camden1964
Paul Ledbetter, 826 South Main, Jonesboro1964	Elvin Shuffield, Donaghey Building, Little Rock1964
H. L. Wineland, 917 Cherry, Pine Bluff1964	Robert Watson, Donaghey Building, Little Rock_1964
ADVISORY COMMETTEE TO THE MEDICAL	Thomas M. Durham, Jr., 236 Central,
ADVISORY COMMITTEE TO THE MEDICAL	Hot Springs1965
ASSISTANTS SOCIETY  Vanuath B. Duran 197 West Oak El Darndo 1964	Ralph A. Downs, 522 South 16th, Fort Smith1965
Kenneth R. Duzan, 427 West Oak, El Dorado 1964	Grover D. Poole, Jonesboro1965
H. King Wade, Jr., 231 Central, Hot Springs	Robert H. Atkinson, 236 Central,
1966	Hot Springs, Chairman 1966
COMMITTEE ON VETERANS ADMINISTRATION	Raymond V. McCray, Malvern 1966
AFFAIRS	U. Lee Smith, Nashville1966
A. J. Forestiere, Harrisburg 1964	COMMITTEE ON CONSTITUTIONAL REFISION
Garland D. Murphy, Jr., 304 East Peach,	Louis K. Hundley, P.O. Box 1521, Pine Bluff, Chairman
El Dorado1965	Council Committee
Chalmers S. Poole1966	H. W. Thomas, Dermott
	John M. Hundley, 412 Cross, Little Rock
COMMITTEE ON INSURANCE	W. J. Butt, 316 West Dickson, Fayetteville
Thomas D. Honeycutt, 509 Cross,	H. King Wade, Jr., 231 Central, Hot Springs
Little Rock, Chairman1964	11. King Water, Jr., 201 dental, 1200 optings
J. F. Kelsey, 500 Lexington, Fort Smith1964	BUDGET COMMITTEE
Curtis Clark, Sheridan 1965	W. R. Brooksher, 318 North Greenwood, Fort Smith,
Stanley Applegate, Springdale1965	Chairman, Council Committee
Guy R. Farris, 810 West 2nd Street, Little Rock1966	Louis K. Hundley, P.O. Box 1521, Pine Bluff
Russell W. Cobb, Malvern1966	Ben N. Saltzman, Mountain Home
CONTRACTOR ON ARRANGEMENTS FOR	SENIOR MEDICAL DAY COMMITTEE
COMMITTEE ON ARRANGEMENTS FOR	Joseph A. Norton, 5408 Centerwood, Little Rock,
ANNUAL SESSION	Chairman, Council Committee
Wm. Martin Eisele, 101 Whittington,	Calvin R. Simmons, 1002 West 14th, Pine Bluff
Hot Springs 1964	Wayne P. Jones, Berryville
H. King Wade, Jr., 231 Central, Hot Springs1964	wayne 1, jones, berryvine
W. R. Lee, 236 Central, Hot Springs1964 Joe Verser, Harrisburg1965	SPECIAL FEE COMMITTEE
Ralph A. Downs, 522 South 16th, Fort Smith1965	Louis K. Hundley, P.O. Box 1521, Pine Bluff, Chairman,
James R. Pierce, 1202 Cherry, Pine Bluff 1965	Council Committee
Thomas E. Burrow, 236 Central,	James M. Kolb, Clarksville
Hot Springs, Chairman	J. J. Monfort, Batesville
Guy R. Farris, 810 West 2nd Street, Little Rock_1966	Jerome Levy, 1425 West 7th, Little Rock
C. Randolph Ellis, Malvern	Charles Reid, 1113 Cherry, Pine Bluff
G. Randolph Litts, Marter	HOSPITAL-INSURANCE-PHYSICIAN
COMMITTEE ON AGING	
John McC. Smith, 4000 Woodlawn, Little Rock1964	COMMITTEE
Ben N. Saltzman, Mountain Home1964	L. E. Drewery, Camden, Chairman, Council Committee
Lon E. Reed, 1315 Central, Hot Springs1965	Guy Farris, 810 West 2nd, Little Rock
Wm. H. Mock, Prairie Grove	Thomas D. Honeycutt, 509 Cross, Little Rock
James M. Kolb, Sr., Clarksville, Chairman1966	SUB-COMMITTEE ON LIAISON WITH THE
Joe H. Hardin, 1425 West 7th Street, Little Rock1966	NURSING PROFESSION
	Hoyt Choate, 1120 Marshall, Little Rock, Chairman,
COMMITTEE ON TRAFFIC SAFETY	Council Committee
E. Frank Reed, Jr., 916 Cherry, Pine Bluff1964	Hugh R. Edwards, Searcy
Henry V. Kirby, Harrison1964	W. E. Morris, 1710 West 10th Street, Little Rock
Wm. S. Orr, Donaghey Building, Little Rock1964	
Archie Hewett, 522 South 16th, Fort Smith1964	LIAISON COMMITTEE WITH STATE
Stuart McConkle, 236 Central, Hot Springs1965	WELFARE DEPARTMENT
Louise Henry, 602 Garrison,	H. W. Thomas, Dermott, Chairman
Fort Smith, Chairman 1966	Joe Verser, Harrisburg
James G. Stuckey, Donaghey Bldg., Little Rock 1966	Elvin Shuffield, Donaghey Building, Little Rock
Hugh R. Edwards, Searcy 1966	C. R. Ellis, Malvern
Joe W. Reid, Arkadelphia1966	Wm. A. Snodgrass, Jr., Donaghey Building, Little Rock

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ASHLEY—Pres. R. L. Salb, Crossett Secy. B. J. Jordan, Crossett

BAXTER—Pres. John F. Guenthner, Mountain Home Secy. Ben N. Saltzman, Mountain Home

BENTON—Pres. Neil E. Compton, Bentonville Secy. John A. Rollow, Bentonville

BOONE—Pres. Robert H. Langston, Harrison Secy. Van Smith, Harrison

BRADLEY—Pres. W. C. Whaley, Warren Secy. George F. Wynne, Warren

CARROLL—Pres, Oliver Wallace, Green Forest Secy. Ross Van Pelt, Eureka Springs

CHICOT-Pres. Byron Z. Binns, Eudora

Secy. A. F. Rosendale, Eudora

CLARK-Pres. J. W. Kennedy, Arkadelphia Recording Secy. H. D. Luck, Arkadelphia

Executive Secy. Howard Campbell, Clark Co. Hospital, Arkadelphia

CLEBURNE—Pres. Nathan Poff, Heber Springs Secy. D. H. McClanahan, Heber Springs

COLUMBIA—Pres. Jack T. Walker, Magnolia Secy. John L. Ruff, Magnolia

CONWAY—Pres. H. B. White, Morrilton Secy. Jean Hunter, Morrilton

CRAIGHEAD-POINSETT-Pres, Vestal B. Smith, Marked Tree

Secy. Orval Riggs, Jonesboro

CRAWFORD—Pres. Robert L. Calaway, Mulberry Secy. J. N. Thicksten, Alma

CRITTENDEN-Pres, Milton Lubin, Turrell Secy. James R. Fall, West Memphis

CROSS—Pres. K. E. Beaton, Wynne

Secy. R. A. Hayes, Wynne

DALLAS—Pres. John H. Delamore, Fordyce Secy. Scott McMahen, Fordyce

DESHA—Pres. Lee B. Parker, McGehee Secy. Swan B. Moss, McGehee

DREW-Pres. P. A. Wallick, Monticello Secy, A. K. Busby, Monticello

FAULKNER-Pres. John W. Sneed, Jr., Conway Secy. Bob G. Banister, Conway

FRANKLIN-Pres. Wm. C. Hensley, Charleston Secy. David L. Gibbons, Ozark

GARLAND-Pres. Thomas Durham, 236 Central, Hot Springs

Secy. A. J. Yates, 211 Hobson, Hot Springs

GRANT—Pres. Jack M. Irvin, Sheridan Secy. Curtis B. Clark, Sheridan

GREENE-CLAY—Pres. Bill C. Page, Corning Secy. Sam D. Watson, Paragould

HEMPSTEAD—Pres. Lowell Harris, Hope Secy. Jud B. Martindale, Hope

HOT SPRING—Pres. John W. Cole, Malvern Secy. Russell W. Cobb, Malvern

HOWARD-PIKE—Pres. John H. Wesson, Nashville Secy. U. Lee Smith, Nashville

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LAWRENCE-Pres. James Hickman, Walnut Ridge Secy. Ralph Joseph, Walnut Ridge

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LINCOLN-Pres. James Freeland, Star City

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LITTLE RIVER—Pres. Joe G. Shelton, Jr., Ashdown Secy. N. W. Peacock, Jr., Ashdown

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LONOKE-Pres. Edward J. Cooper, England Secy. B. E. Holmes, Lonoke

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MISSISSIPPI—Pres. E. H. Ball, Blytheville Secy. Eldon Fairley, Osceola

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OUACHITA-Pres. P. J. Dalton, Camden Secy. R. B. Robins, Camden

PHILLIPS—Pres. Charles B. McCarty, Helena Secy. William B. Connolly, Helena

POLK-Pres. David P. Hefner, Mena Secy. Henry N. Rogers, Mena

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SEARCY—Pres. John H. Williams, Marshall Secy. John A. Hall, Clinton

SEBASTIAN—Pres. Boyd Saviers, 1500 Dodson, Fort Smith Secy. Don M. Meador, 3911 North O, Fort Smith

SEVIER-Pres. E. A. Joseph, DeQueen

Secy. J. F. Daniel, DeQueen

ST. FRANCIS—Pres. C. E. Crawley, Forrest City Secy. John Neal Laney, Forrest City

UNION—Pres. W. S. Rainwater, 422 West Oak, El Dorado Secy. W. S. Riley, 526 West Faulkner, El Dorado

WASHINGTON-Pres. Thomas Gray, V. A. Hospital, Fayetteville Secy. James Patrick, 241 North Spring, Fayetteville

WHITE—Pres. A. R. Brown, Searcy Secy. Hugh R. Edwards, Searcy

WOODRUFF-Pres. Frank C. Maguire, Jr., Augusta

Secy. C. E. Dungan, Augusta



### THE SABIN ORAL SUNDAYS HAVE SEVERAL FACES

Jerome S. Levy, M.D.\*

THE POLIO IMMUNIZATION campaigns have built up several very important areas which are of special interest to those in the field of medicine. The major area is the actuality of the elimination of poliomyelitis. The earliest concepts of medicine were the cure of the sick or, if cure were not possible, the relief of pain and suffering. There gradually evolved the additional concept of the prevention of disease. To some, large governmental administrations are the only means to accomplish this; to others, the private practice of medicine is the agency through which to act. Whichever it is, the basic fact is that polio can be prevented. We, the doctors, have initiated the efforts to protect everyone from polio. We take great pride that we had such a vital role in this accomplishment. We are appreciative of the fine support and dedication of the many volunteers enlisted from the public as a whole. These men and women made the programs into community projects which bring to the entire population a sense of greater security. It leads to a sense of personal satisfaction to have participated in eradication of a disease. The medical profession also should feel pride, satisfaction and gratification. A wonderful thing has been done. This is the first face.

The wide area of the community profits from these programs. The medical profession has an additional benefit in the restoration of a most important image of the doctor. In past years, the doctor has sat upon the pedestal of public respect and actual adoration. We had built this pedestal by careful attention to the needs of the people, by the warmth of our interest, by our dedication to the relief of suffering, and by being ready with thoughtful consideration in times

of trial. This pedestal had been weakened, and, too often, thrown over by the changing public image of the doctor as a member of a big business, heartless and disinterested. We know these images are false, but the unions, the social workers, the do-gooders and the politicians find us targets for attacks. The effect of such public service programs – the Sabin Oral Sundays and their predecessors the Salk Vaccine Nights-has been to restore the image of the doctor to its former eminence. You are familiar with the stories of the recovery of famous paintings when the covering of dirt or of another painting has been removed to reveal the work of one of the old masters. The polio programs act similarly in restoring the position of the doctor to the former one of distinction. These campaigns produce immunity to polio – and are the beginning of another immunity-that of the public to socialized or government medicine. This is another face. The improved public relations has a value which cannot be computed and the public image of the doctor becomes enhanced again.

This has been the total effect all over the country in all communities where the Sabin Oral Sundays have been held. This is true in Pulaski County and in each county over the State. These become a pattern for future opportunities to serve the people of our State and of our home county and city. Every illness does not lend itself to such a program. We, as doctors, have the solemn obligation to institute such campaigns whenever the opportunity presents itself. We do it—the government does not have to. We do it—the unions do not have to insist on government medicine, in or out of Social Security. The wholehearted cooperation by all community groups has been

<sup>\*1425</sup> West 7th Street, Little Rock, Arkansas.

remarkable everywhere and within Pulaski County it has been outstanding. This pattern of cooperation evidences that there is present in the people of this State a fond regard for their doctors. This is a pattern we must perpetuate. This is another face.

I cannot stop without a further suggestion — another face perhaps. A surplus of monies has accrued from these programs. It should be returned by doctors through their Medical Socie-

ties to the people for further enhancement of the new-old image. These Sabin Oral Sundays cannot succeed without the cooperation of many groups. The PTA's are hungrily interested in the school libraries—a worthy depository for such surplus funds—Child Guidance Centers, Senior Citizens Activities, and many others come to mind. All are for the community's benefit. And for such a purpose these funds should go—and the results? Another face—a fresher one that comes to the front as we wash off the imposter's stroke of paint.

### Resolution

Whereas, Arkansas Medical and Hospital Service, the Blue Cross-Blus Shield plan in Arkansas, has shown a consistent and steady growth in enrollment and services for the citizens of Arkansas, and,

Whereas, the success of the voluntary prepayment plan for medical and hospital services in this State is largely due to the loyal and unselfish interest and efforts of its Board of Trustees, and,

Whereas, Dr. Ellery C. Gay has been a member of this Board of Trustees from the inception of

the plan and has given freely of his time and ability with commendable dedication, and,

Whereas, Dr. Gay has now announced that he does not wish to continue to actively serve as a representative of this Society and as a Trustee,

Therefore, Be It Resolved, by the Council of the Arkansas Medical Society, in session assembled this thirty-first day of March, 1963, that the full appreciation of the Society and of the membership of the Blue Cross-Blue Shield plan in Arkansas be tendered and recorded for the unstinting devotion which Dr. Gay has brought to the system of voluntary pre-payment plan in Arkansas.



### U of A Receives Grant From AMA Education and Research Foundation

The University of Arkansas Medical Center received an \$8,962.30 grant from the American Medical Association Education and Research Foundation. Dr. Winston K. Shorey, dean of the School of Medicine, received the check from Dr. H. King Wade, Jr., president of the Arkansas Medical Society, at the annual Society convention here.

"This general fund is of great benefit, since it can be applied to unforseen needs that can't be anticipated in annual budget making," said Dr. Shorey. "The School of Medicine is deeply grateful for the grant."

The Arkansas grant is part of \$1,461,810 contributed for medical schools in 1962 to AMA-ERF by physicians and their families throughout the country. The national figure was 12 per cent more than was contributed in 1961, and is being distributed to 88 schools this year.

Use of the grant money is left to the discretion of the medical school deans, said the AMA.

### **Operation Doctor**

Independence in the formerly Belgian Congo brought with it much suffering caused by lack of medical personnel. An appeal through Church World Service to Protestant churches in America in the summer and fall of 1960 resulted in sizeable contributions out of which an emergency fund of approximately \$300,000.00 was allocated, to be administered through the newly formed Congo Protestant Relief Agency, for the purpose of attempting to alleviate the physical suffering of the Congolese.

The "Operation Doctor" program was begun, and the first physician to serve under this program, Dr. E. Dorothea Witt of New Orleans, left for the Congo in December, 1960, for one year. Through March 1963, CPRA has sent 41 physicians and surgeons—serving from two-year terms to shorter than six months.

If any physician is interested, they can contact Congo Protestant Relief Agency in New York City, or Dr. J. A. Norton, 843 Donaghey Bldg., Little Rock, Arkansas.

### Recipients of Research Scholarships and Fellowships Announced

Recipients of scholarships and fellowships totaling more than \$60,000 were announced recently by the American College of Physicians.

Nineteen American and Canadian physicians were selected to receive research fellowships and scholarships. Six Latin-American doctors were chosen to receive special fellowship training in the United States.

The Fellowship and Scholarship program is one of the postgraduate education activities of the American College of Physicians, which represents more than 11,600 internists and specialists in other fields.

### Clarksville Physician Club's Guest Speaker

Dr. James Kolb of Clarksville, addressed the Fort Smith Soroptimist Club recently at a dinner meeting at the Ward Hotel.

Dr. Kolb is the third generation of a family of practicing physicians in Johnson County, is a past president of the Arkansas Medical Society and the American Medical Association, and has received numerous honors as a physician.

### Thornton Doctor Marks 65th Year of Practice

Dr. Thomas E. Rhine of Thornton, observed his 65th year as a country doctor in March.

The 87-year-old doctor is a native of Mississippi, and first began the practice of medicine at Locust Bayou. He has been Thornton's only doctor many years, and for a period during World War II was the only one in Calhoun County. After a stint as a school teacher, he entered Memphis Hospital College in 1896.

Dr. Rhine obtained his license to practice after an examination by three Calhoun County doctors. He rode into Thornton on a horse and set up practice with \$40.00 he had borrowed from a friend.

He was appointed head surgeon of Stout Lumber Company in Thornton in 1900 and held the position until the mill closed in 1927. He was named Arkansas' Doctor of the Year in 1949 and was runnerup in the National Doctor of the Year contest.

Dr. Rhine helped organize the Dallas County and Calhoun County Medical Societies, and was president of the Ouachita Medical Society in 1943. He also was a founder of the Southern Medical Association, and holds a lifetime membership in the Arkansas Medical Society and the American Medical Association.

### Ouachita County Physicians Offer High School Prizes

Recently the physicians of Ouachita County offered the high school students of the tenth to the twelfth grades prizes for essays on "The Advantages of the Free Enterprise Way of American Life." Some two hundred high school students competed in the essay contest.

Judges awarded the three top prizes to Jan Tureski for \$100.00 as first prize winner, Mary Margaret Drewrey was awarded \$50.00 as second place winner and Judy Shankle \$25.00 as third prize winner.

The essay from the top prize winner will be submitted to the national contest to compete for judging for the national prize winner for a \$1,000.00 award. The physicians of Ouachita County were pleased to find that there was such great interest among the high school students in a contest of this character and recommends such a project to all county medical societies.

### Provision for Medical Care to Dependents of Members of the Military Forces of NATO Countries

- 1. On and after 1 July 1963 the accompanying dependents of active duty military personnel, who are members of the land, sea and air forces of North Atlantic Treaty Organization countries stationed or passing through this country, will be entitled to the same care under the Medicare Program as those dependents of members of the uniformed services.
- 2. The standard Identification Form DD, Form 1173 will be furnished to those dependents and all contractual provisions and criteria as to scope

of care and eligibility will be the same as for dependents of members of our uniformed services.

- 5. This provision becomes effective I July 1963 and will be implemented by formal contract modification.
- 6. Contractors are requested to announce this change in the Dependents' Medical Care Program through their periodic publications.

### THE MONTH IN WASHINGTON

Washington, D.C.—A presidential advisory commission urged a massive attack by the federal government on illicit traffic in narcotics and dangerous drugs.

The commission recommended establishment of a special unit of investigators and lawyers in the Department of Justice to hunt down and prosecute big-time smugglers and sellers.

For the addict, the commission suggests more emphasis on rehabilitation rather than punishment. The commission said penalties in federal narcotics laws are too rigid for some of the lesser offenses and urged that these be relaxed to give courts more discretion in dealing with these offenders.

In an interim report, the commission also touched on the controversial question of whether drugs should be dispensed to addicts in treatment by physicians. It recommended that the American Medical Association and the National Research Council "submit definitive statements as to what constitutes legitimate medical treatment of an addict, both in and out of institutions."

The commission said it intends to make an intensive study of the issue of discipline versus rehabilitation in the treatment of drug abusers. It said it considered a combination of the two approaches best.

Other major recommendations included:

Stricter control of the manufacture and use of the so-called "dangerous drugs," such as barbiturates and amphetamines.

A comprehensive research program into all phases of drug abuse.

Establishment of a joint United States-Mexican commission to control the illicit traffic of narcotics and drugs from Mexico into the United States.

On the same day, the New York Academy of Medicine issued a report sharply attacking what it called the Federal Bureau of Narcotics' "punitive attitude" of treating drug addicts as criminals and attempting to control addiction by imposing stiff legal penalties.

The report of the New York physicians charged the Bureau of Narcotics with forcing "unsound" medical treatment of drug addicts, intimidating doctors who attempt to treat addicts and generally holding back "progress in the conquest of addiction."

\* \* \* \* \*

The Department of Health, Education and Welfare licensed the manufacture of both a live-virus and a killed-virus measles vaccines.

Merck, Sharp and Dohme of Philadelphia was licensed to market a live-virus measles vaccine and Charles Pfizer & Co. of New York City was licensed to market a dead-virus vaccine in what health officials foresaw as the weapons for possible victory in the age-old battle against the persistent and often serious ailment.

Merck, Sharp and Dohme made available a limited quantity of the live-virus vaccine throughout the United States within two days of the licensing on March 21.

Surgeon General Luther L. Terry of the Public Health Service urged inoculation of any child under the age of six who had not had measles.

Dr. Hugh H. Hussey, director of the American Medical Association's Division of Scientific Activities, said the new vaccines made it possible to launch an all-out attack against one of the most common childhood diseases.

Both HEW Secretary Anthony J. Celebrezze and Dr. Terry were optimistic about the possibility of the vaccines putting the nation on the road toward elimination of the disease.

Development of the measles vaccines stemmed from the work of Nobel prize winner, Dr. John Enders of Harvard University and an associate, Dr. Thomas Peebles, who isolated a strain of the measles virus in 1954. From this original strain of the virus, designated the Edmonston strain, both the live and the killed vaccines have been produced.

Over the past several years, the vaccines have been successfully tested in both this country and abroad. Nearly 50,000 children in the United States alone have received these vaccines in field trials. Celebrezze characterized the field trials as "a long and painstaking evaluation" and said that "this was made possible by the cooperative efforts of scientists—both in and out of government—by physicians, the pharmaceutical industry,

and thousands of unselfish and courageous parents who have permitted their children to participate in the field trials."

A Surgeon General's advisory committee on measles control, composed of government and non-government experts, suggested most physicians would want to administer the live vaccine, with an accompanying shot of gamma globulin to reduce reactions. One injection of the live vaccine has conferred complete immunity to more than 95% of those vaccinated and susceptible to measles. But when given alone it produces side reactions, including a rash and a fever of at least 103 degrees, in 30% or more of those vaccinated.

The advisory committee said the killed vaccine, because of its poorer immunizing qualities, should be used only where the live product wasn't suitable.

Experts said the live vaccine's protection was as good as that resulting from the natural disease and had been demonstrated to last more than four years.

The estimated number of measles in the U.S. was 6.8 million in 1962 and averages at least 4 million a year annually. In 1961 there were 434 deaths from measles.

Government health officials said they anticipated no federal financing or distribution of the measles vaccine. It was expected the distribution will be through physicians in private practice or through community "well baby" clinics.

\* \* \* \* \*

The Food and Drug Administration banned the use of menadione, vitamin K-3, in foods and food supplements.

An FDA spokesman said the ban was ordered because the agency decided that the manufacturer had not provided sufficient data under the food additive law to prove compliance with safety requirements.

However, the spokesman denied reports that use of menadione posed a serious danger to unborn infants. He said expectant mothers who had taken it in prenatal vitamin capsules should not be alarmed.

The FDA action followed testimony by Dr. John O. Nestor, a pediatrician on the FDA staff, before a Senate Government Operations Subcommittee that use of menadione in prenatal supplements might result in "brain damage, spasticity and death" to some newborn infants.

Nestor charged that the FDA had overruled

expert medical opinion and permitted sale of some "new drugs imminently hazardous to the public health."

The FDA denied the charges that its nonmedical officials had been allowing potentially dangerous drugs to reach the market.

Variations in Expenditures From Funds
Designated for Sponsored Research and
From Funds Available for Non-Research
Projects as Between 26 Private and
16 Public Schools, 1941-61

The previous Datagram, Vol. 4, No. 9, presented trends in the sources of medical school income over the years for basic operations. The present Datagram compares the trends from 1941 through 1961 in average expenditures per school

The FDA said that Dr. Nestor had never informed the agency of his complaints before he made the charge before the subcommittee.

"We categorically deny that laymen have been making medical decisions," the FDA said.

from funds designated for sponsored research with those available essentially for basic operations. These trends are contrasted as they pertain respectively to the average per school for 26 private and 16 public schools.

For the purposes of this particular presentation, medical school expenditures are divided into two categories: (1) those from funds specifically designated for research projects and (2) those for the balance of the medical school program available

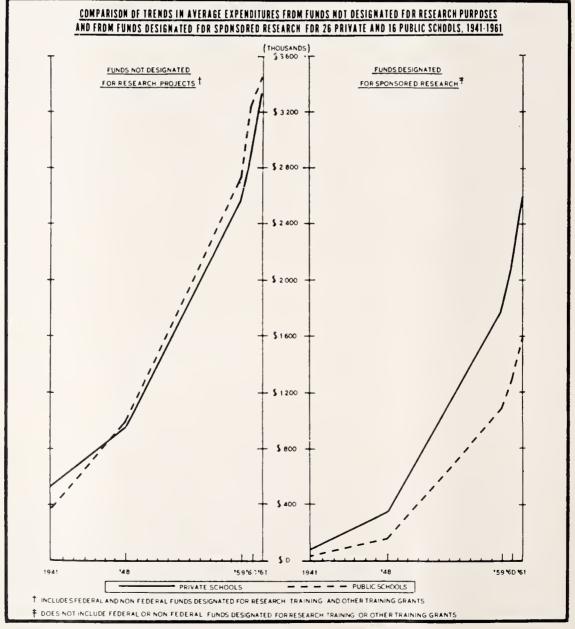


FIGURE 1

### FEATURES

from all other sources including federal and nonfederal research training grants and teaching grants.

From Figure 1 it can be seen that in 1941, when expenditures from funds designated for sponsored research were a relatively insignificant portion of expenditures for all purposes, the average expenditure from funds available for non-research purposes for private schools exceeded that of the public schools by a considerable amount (\$516,000 versus \$371,000). By 1958 this type of expenditure for the private schools was approximately equal to that of the public schools. By 1959 the situation of 1941 reversed itself, and more recently public schools have spent on the average more from funds available for non-research purposes than have the private schools.

The situation with respect to average expenditures per school from funds specifically designated for research is different. Here the expenditures of the private schools have always exceeded those of the public schools.

Note: The inclusion of funds designated for "research training" among those not designated for research projects is due to the fact that the questionnaires from which these data have been taken do not separate expenditures from funds for undergraduate teaching from those for research training. A fairly reliable estimate of expenditures from federal funds can be made for the separation of the two functions but not so for funds of non-federal origin.

Table 1 contains supporting data for the chart.

TABLE 1

Comparison of Average Expenditures from Funds Designated for Sponsored Research and From Funds Not Designated for Research Projects for 26 Private and 16 Public Schools for the Years 1940-41, 1947-48, 1958-59, 1959-60 and 1960-61 (\$ in Thousands)

	(26) Private Schools			(16) Public Schools						
	1941	1948	1959	1960	1961	1941	1948	1959	1960	1961
Funds Designated For Sponsored Research	\$ 82	\$ 342	\$1,787	\$2,100	\$2,595	\$ 32	\$ 160	\$1,063	\$1,298	\$1,590
Funds Not Designated For Research Projects†	<b>\$</b> 516	956	2,561	2,848	3,316	371	963	2,720	3,212	3,412
Total of Average Expenditure Per School	\$598	\$1,298	\$4,348	\$4,949	\$5,911	\$403	\$1,124	\$3,783	\$4,510	\$5,001

Note: Detail may not add to total due to rounding.

†Federal funds for research training are included in this item. Federal research training grants have increased in amounts each year from less than 0.1% in 1948 to more than 10% of this category in 1961.

<sup>\*</sup>Submitted by the Division of Operational Studies of AAMC. Sources of information will be furnished upon request.



### Dr. J. Harry Hayes, Little Rock Surgeon, Dies

Dr. J. Harry Hayes, 58, who had practiced thyroid and general surgery in Little Rock since 1934, died April 10th in a Little Rock hospital.

He was president of the Little Rock Academy of Surgery, vice chairman of the section on general surgery of the American Medical Association and president of the American Society of Abdominal Surgeons. He was a native of Rosebud, Texas, and was graduated from New Bern, N. C., High School and received bachelor and master of science degrees from Hendrix College at Conway.

He graduated from the University of Arkansas Medical School in 1929 and interned at St. Vincent Infirmary. He began his medical practice in Wisconsin and later served as city physician at Mansfield, Ohio. He continued in public health work for four years and during that period became interested in thyroid surgery.

When he returned to Little Rock, he became an instructor of surgery at University Hospital in addition to his private practice. He was named to the staffs of St. Vincent Infirmary, Baptist Hospital and Arkansas Children's Hospital. In 1941, he founded the goiter clinic at the Medical School and was named preceptor of University Hospital. For five years he taught surgery and in 1960 he was elected to the honorary staff of the Medical School. He was past chief of surgery at the State Hospital and St. Vincent Infirmary.

He was a trustee of Southwestern Society of Nuclear Medicine, a fellow of the American College of Surgeons and the International College of Surgeons and a diplomat of the board of Life Insurance Medicine. He was a member of the Arkansas Medical Society, the Pulaski County Medical Society, the American Thyroid Association, the Society of Nuclear Medicine and a senior fellow of the Southwest Surgical Congress.

Dr. Hayes was a member of the Pulaski Heights Methodist Church.

### **Death Takes Prominent Searcy Physician**

Dr. William Lovell Davis, prominent Searcy Physician, died suddenly Friday, March 8, 1963 in a Little Rock Hospital.

Born in Pennsylvania, he was the son of the late Jennifer Lovell and John Evan Davis, Sr. He received his medical degree from Jefferson School of Medicine in Philadelphia, served his internship at the Cooper Hospital in New Jersey, and four years residency in internal medicine at the Kennedy General Hospital, Memphis, Tennessee.

Dr. Davis came to Searcy in 1950 to join the staff at Hawkins Clinic Hospital. In 1952 Dr. Hawkins, Dr. Davis and Dr. A. R. Brown formed a partnership. Dr. Formby joining the staff in 1953. In August 1960, Dr. Davis, along with Dr. Formby and Dr. Brown formed the Searcy Clinic with which he was associated until his death.

Dr. Davis was a veteran of World War II, and a member of the White County Medical Society, the Arkansas Medical Society, The American Medical Association, the American Geriatric Society and the American Society of Internal Medicine.

He was a deacon of the First Christian Church.



### PERSONAL AND NEWS ITEMS

### Batesville Doctors Honored by Medical Auxiliary

In observance of Doctors Day, the Batesville Auxiliary entertained the Batesville Doctors with a dinner at the Batesville Country Club.

Out of town guests were Dr. and Mrs. Glenn

Keller of Jonesboro and Dr. and Mrs. Wayne Stanfield of Newport. Twenty-four doctors and auxiliary members were present. Mrs. Charles Taylor is president of the auxiliary and Mrs. Alfred Hathcock was chairman for the event.

### Dr. Reagan Speaks to Ouachita County Medical Society

Dr. Paul Reagan, Director, Division Tuberculosis Control, State Health Department, Little Rock, spoke recently to the Ouachita County Medical Society.

### Memorial Grant Dedicated to the Late Dr. Fount Richardson

The Medical Education Foundation for Arkansas has made available a special memorial grant to the University of Arkansas Medical Center, dedicated to the late Dr. Fount Richardson of Fayetteville.

The Foundation has earmarked this grant to the School of Medicine for the purchase of microscopes to be used by medical students not able to buy such instruments. Dr. Winston K. Shorey, Dean of the School of Medicine, said that as a beginning five microscopes had been purchased for use by members of next year's freshman class.

### Dr. Morriss M. Henry Addresses Fayetteville Lions Club

"Eye Diseases" was the subject of an address given by Dr. Morriss M. Henry of Fayetteville, Arkansas to the Fayetteville Lions Club recently.

### Dr. James M. Kolb, Sr. Addresses Fort Smith Soroptomist Club

Dr. James M. Kolb, Sr., of Clarksville addressed the Soroptomist Club of Fort Smith on "A New Concept of Aging."

### New Clinic Holds Open House in Paris, Arkansas

Opening of a new medical clinic at Paris has been announced by Dr. John W. Redman, formerly of Fort Smith and Van Buren. The new clinic is located at 1504 South Elm Street. The building was open for public inspection recently.

### Jean Gladden Presides at Mexico City Meeting

Jean Gladden of Harrison, Arkansas, presided at a scientific session of the Southwestern Surgi-

cal Congress, meeting in Mexico City, April 22-25.

### Dr. Kennedy Speaks at Monticello A & M

Dr. Jack Kennedy, Arkadelphia, spoke recently to the Southeast Arkansas School Masters Club at Monticello A & M College. His subject was "Physicians and Schools."

### Contributors to the American Medical Association Education and Research Foundation February, 1963

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\$190.00



DR. EDWARD J. COOPER is a new member of Lonoke County Medical Society. He is a native of Ouachita and his preliminary education was received from the University of Arkansas. In 1961, his M.D. degree was received from the University of Arkansas Medical School. Dr. Cooper's office is located at 214 East Haywood in England, Arkansas. He is a general practitioner.

A new member of Greene-Clay County Medical Society is DR. DANVIS W. RUST. A native of Rector, Arkansas, his pre-medical education was received from the University of Arkansas. His M.D. degree was received in 1956 from the University of Arkansas School of Medicine. Dr. Rust practiced in Searcy, Arkansas, from 1957 until 1958; in Las Cruces, New Mexico, from 1958 until 1962. He is now located at 110 East 4th Street in Rector. He is a general practitioner.

Monroe County Medical Society announces that DR. E. MORGAN COLLINS, JR. has been added to its roster of members. A native of Marianna, Arkansas, he received his preliminary education at Oklahoma State University in Stillwater, Oklahoma. His M.D. Degree was received from the University of Arkansas School of Medicine in 1959. Dr. Collins served with the U. S. Public Health Service for two years. His office is now in Clarendon, Arkansas. He is a general practitioner.

DR. BYRON GRIMMETT is a new member of Columbia County Medical Society. He was born at Waldo, Arkansas and received his premedical education from Magnolia A & M College. In 1959 he received his M.D. degree from the University of Arkansas School of Medicine. Dr. Grimmett is a general practitioner and his office is in Waldo, Arkansas.

A new member of Craighead-Poinsett County Medical Society is DR. TANDY G. MORRIS. A native of Jackson, Tennessee, he received his pre-medical education from Vanderbilt University in Nashville, Tenn. His M.D. degree was obtained from the University of Tennessee in 1958. Dr. Morris' specialty is internal medicine and his office is located at 505 East Matthews in Jonesboro, Arkansas.

DR. ROBERT K. PAUL is a new member of the Hot Spring County Medical Society. A native of Hopkinsville, Kentucky, he received his preliminary education from Hendrix College in Conway, Arkansas. In 1953, his M.D. degree was received from the University of Arkansas School of Medicine. He practiced in Mobile, Alabama from 1953 until 1958; in New Orleans, Louisiana from 1959 until 1962; in Chattanooga, Tennessee from February, 1962 until August, 1962. Dr. Paul's address is now 1234 South Main in Malvern, Arkansas. He is a radiologist.

Crittenden County Medical Society announces that DR. C. J. LITTLE is a new member. He is a native of Memphis, Tennessee and his premedical education was received from Ouachita Baptist College in Arkadelphia. His M.D. degree was received from the University of Arkansas Medical School in 1961. Dr. Little is now in West Memphis, Arkansas with his office at 200 South Rhodes. He is a general practitioner.

A new member of Conway County Medical Society is DR. JEAN HUNTER. A native of Lake Village, Arkansas, she received her preliminary education from Arkansas A & M College in Monticello. Her M.D. degree was received from the University of Arkansas Medical School in 1958. Dr. Hunter's specialty is pediatrics and her office is located at 200 South Moose Street in Morrilton, Arkansas.

DR. RONALD J. BRACKEN is a new member of Garland County Medical Society. He was born at Camden, Arkansas, and received his premedical education at the University of Arkansas. His M.D. degree was received from the University of Arkansas Medical School in 1958. Dr. Bracken's specialty is ophthalmology; his office is located in the Medical Arts Building in Hot Springs, Arkansas.

A new member of Greene-Clay County Medical Society is DR. IRWIN JOFFE. A native of New York, his preliminary education was obtained at Tulane University. His M.D. degree was received from Tulane University School of Medicine in 1944. Dr. Joffe's office is now at the Community Methodist Hospital in Paragould, Ark. He is a pathologist.



### BOOK REVIEWS

THE COMPLEAT PEDIATRICIAN, by WILBURT C. DAVISON, M.A., D. Sc., M.D., James B. Duke Professor of Pediatric, Duke University School of Medicine, and Pediatrician, Duke University Medical Center; Honorary Member American Academy of General Practice; Member American Pediatric Society; Fellow American, Academy of Pediatric and American College of Physicians. Formerly Acting Head of Department of Pediatrics, The Johns Hopkins University School of Medicine, Acting Pediatrician-in-Charge, The Johns Hopkins Hospital, and Member American Board of Pediatrics and Division of Medical Sciences, National Research Council, and JEANA DAVISON LEVINTHAL, B.A., M.D., Research Associate, Harvard Medical School, Eighth Revised Edition, pp. 260, Printed by Seeman Printery for Duke University Press, Durham, N.C., 1961.

This text is a handbook of pediatric diseases. It discusses an astounding number of pediatric conditions in less than 300 pages. As a result, the discussions are necessarily extremely brief. It is an excellent book for medical students to carry on the wards. It is probably of some value to the rotating intern on pediatrics. It probably has almost no usefulness for the practicing physician. Its principal value probably lies in the vast number of conditions listed which, by their very numbers, suggest unusual diagnoses that might be forgotten; for example, some of the conditions are Peutz-Jeghers syndrome, Crist-Sieman syndrome, Milker's nodules, etc. To the reviewer it would seem that the large number of conditions listed in this book is its most valuable asset. The reader could then look the condition up in some longer text. AK

MEDICAL PHYSIOLOGY, Eleventh Edition, Edited by Philip Bard, Professor of Physiology, The Johns Hopkins University, pp. 1339, illustrated, published by The C. V. Mosby Company, St. Louis, 1961.

This text in its eleventh edition is one of the outstanding textbooks of its kind. It is divided along rather conventional lines into the principal organ systems of the body. It has excellent references pertaining to each chapter. The

various chapters are written by different authoritative authors. One might justifiably raise the philosophic question as to whether or not this textbook would not be improved by including pathologic physiology. The current trend in medical education leans toward teaching a unified description with both abnormal and pathological features of disease in many of the medical disciplines. This text has a moderate number of graphs and charts; there are relatively few illustrations. It is up-to-date in most respects. It is heartily recommended as a textbook of medical physiology.

RESPIRATION IN HEALTH AND DISEASE, by R. M. CHERNIACK, M.D., M.Sc., F.R.C.P.(C.), Assistant Professor of Medicine, University of Manitoba School of Medicine; Director, Respiratory Division, Clinical Investigation Unit, and Assistant Physician, Winnipeg General Hospital; Consultant in Respiratory Diseases to Children's Hospital and Municipal Hospitals, Winnipeg, Canada, and L. CHERNIACK, M.D., B.Sc., M.R.C.P. (Lond.), F.R.C.P.(C.), F.A.C.P., Assistant Professor of Medicine, University of Manitoba School of Medicine; Associate Physician, Winnipeg General Hospital; Physician, Division of Medicine, Winnipeg Clinic, Winnipeg, Canada, pp. 403, illustrated, published by W. B. Saunders Company, Philadelphia and London, 1961.

This book gives a well rounded discussion of respiratory disease. As is inevitable, it is difficult to limit a book on diseases of respiration and not overlap into diseases of the lung generally. This rather artificial barrier is a considerable handicap in the reviewer's estimation. The authors discuss the clinical assessment of respiratory function at the last part of the book and it really should come after the basic considerations which include mechanics of breathing, gas distribution, respiratory function of the blood and regulation of respiration. It is another anomaly. In this book of 383 pages is the fact that only 150 pages of the book are devoted to the pathology of respiration. The reviewer finds the book to be interesting but somewhat loosely organized and would prefer the book to be included in a general text on diseases of the lung. The book is recommended to those interested in the pathology of respiration.

THE CERVIX UTER1 and Its Diseases, by C. FREDERIC FLUHMANN. B.A., M.D., C.M., Chief of Obstetrics and Gynecology, Presbyterian Medical Center, San Francisco, California; Clinical Professor of Obstetrics and Gynecology, Stanford University School of Medicine, Palo Alto, California, pp. 556, illustrated, published by W. B. Saunders Company, Philadelphia and London, 1961.

This book is of considerable interest to the gynecologist but is somewhat more detailed than would interest the practicing physician. The book has excellent illustrations, some of which are in color. There is a very interesting chapter on cervical cytology. Other chapters of diagnostic interest include tissue biopsy and colposcopy. The organization of the book is along rather conventional lines. The style of writing is easy to read. The references at the end of the chapters are quite good. The cervix in pregnancy is discussed. There are good chapters on therapy of cervical diseases. This book is heartily recommended to obstetricians, gynecologists and to practicing physicians who would like a brief reference book. AK

# 4

### ABSTRACTS

Sponsored by Arkansas Tuberculosis Association

### FATAL CHRONIC BRONCHITIS

TUBERCULOSIS

In the United States chronic bronchitis is usually thought to precede emphysema in fatal cases, but a correlation between clinical observation and morphological findings in four patients showed death can be caused by chronic bronchitis.

Chronic bronchitis has been recognized as a pathologic and clinical entity in Great Britain and is widely regarded there as the principal cause of diffuse pulmonary emphysema. In the United States, chronic bronchitis has until recently been regarded as a "wastebasket diagnosis," made when the cause of a chronic cough was not clear. Furthermore, physicians in the United States commonly assume that when British patients die of chronic bronchitis it is the associated emphysema or loss of alveolar walls which kills them, that is that chronic bronchitis per se is a nonfatal disease.

In the present study, for three years the lungs of persons who died from various causes in two hospitals were examined to establish the morphologic basis for the clinical and physiologic signs and symptoms of pulmonary disease. The studies were initially confined to examination of one lung from each patient by the formalin fume-fixation method in the hope that stereoscopic estimations of parenchymal damage would correlate well with the severity of disease in life.

Early in these studies one case was found in the material from each hospital which clinically was diagnosed as severe emphysema with cor pulmonale and right heart failure, but which showed only mild emphysema morphologically plus hypertrophy and dilation of the right heart. Such apparent discrepancies between the clinical and morphologic findings led to additional detailed

studies of the bronchi using conventional staining and fixation of sections from the contralateral lung. Since then, a total of four cases of death due to chronic bronchitis and its complications without severe emphysema have been found.

Pulmonary emphysema is most appropriately defined on the basis of morphologic changes in the lungs. Chronic bronchitis, although now a well-defined morphologic entity, is most commonly defined in clinical terms. However, these two diseases frequently give rise to the same manifestations and often occur in the same patient, making their distinction and diagnosis on clinical grounds alone exceedingly difficult. As for the value of pulmonary function tests to aid in differential diagnosis, there is general agreement on the physiologic manifestations of emphysema, but the value of such testing in bronchitis is not clear because few patients with chronic bronchitis without other diseases, as established at autopsy, have had complete studies of respiratory function.

The revival of methods for studying the lung in the inflated state has recently revived hope of clarifying structure-function relationships in these diseases and, thus, of providing an answer to whether tissue changes are related to symptoms.

No morphologic studies have explained the nature of the process by which cyanosis, pulmonary hypertension, and heart failure occur in these diseases. Cases have been recognized recently with marked cyanosis, pulmonary hypertension, and right heart failure, yet with minimal postmortem evidence of alveolar wall destruction. It has been shown, too, that histologic changes in the small pulmonary vessels in emphysema cannot be regarded as the morphologic basis for the pulmonary hypertension.

HISTORY OF CHRONIC ABNORMALITY

If neither reduction in the total number of alveolar capillaries nor changes in the pulmonary

William Hentel, M.D.; A. N. Longfield, M.D.; Thomas N. Vincent, M.D.; Giles F. Filley, M.D.; and Roger S. Mitchell, M.D. The American Review of Respiratory Diseases, February, 1963

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Research in the Service of Medicine

arteries can account for the pulmonary hypertension of chronic bronchitis and/or emphysema, it would appear that other factors must be considered. Perhaps the most acceptable explanation today depends upon the fact that patients with fatal chronic bronchitis often have a long history consistent with chronic hypoxia and probably hypercapnia; chronic hypoxia has been shown capable of inducing pulmonary hypertension both under natural and experimental conditions.

Careful study of the air spaces and airways in chronic bronchitis gives the impression that chronic bronchitis is, at least in part, a reversible process, especially if rational therapy could be started before the onset of hypertensive changes in the pulmonary arterioles. The bronchial and bronchiolar walls are thickened and inflamed. The epithelium has undergone metaplasia and may no longer have a normal complement of cilia. The bronchial glands are markedly hypertrophied. However, areas of necrosis, that is, bronchiectasis, are infrequent and limited in extent. Fibrosis and alveolar wall destruction were not severe in the four fatal cases and were localized mostly to the peribronchial areas. Judging from the morphology in these cases, therefore, a favorable effect upon the course of this disease might be expected from early intensive therapy, especially if applied before the onset of irreversible changes. This therapy would include the use of appropriate antimicrobials, postural drainage, tracheal fenestration, and avoidance of repeated infections. Such persons obviously should cease smoking altogether and avoid exposure to other sources of irritating air pollutants. Parenthetically, since many cigarette-smoking bronchitics are virtual cigarette addicts, an almost insoluble therapeutic problem is posed.

The clinical identification of chronic bronchitis in a still treatable phase should be possible. The diagnostic features in the four fatal cases included the following:

- (1) Severe chronic cough, especially in the morning when a period of strangling over a small amount of sticky mucus was a fairly regular occurrence.
- (2) Repeated deep respiratory infections, slow to improve.
- (3) Physiologic manifestations suggestive of diffuse emphysema but with slight differences and with slight to moderate rather than marked increase in total lung capacity, and hypoxia and hypercapnia usually out of proportion to the other findings.
- (4) The chest roentgenogram, especially the tomogram, often failed to show the paucity of bronchovascular markings seen in classic diffuse emphysema.

Observers in the United States appear not to have given the attention to this disease which its severity, frequency, treatability, and possible preventability merit. Patients and even physicians are too apt to accept and even foster the common label of "smoker's cough," which is given to the early symptom of the disease. A severe chronic cough should be evaluated carefully, well before any disability has been noticed by the patient. By the time most patients notice any disability, the pulmonary functional loss may well have reached 50 per cent or more.

# THE July, 1963 JOURNAL OF THE ARRANSAS MEDICAL SOCIETY

Vol. 60 No. 2

FORT SMITH, ARKANSAS

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REFERENCES: (1) Hammill, J. F.: J. Chron. Dls. 8:448, 1958. (2) Roseman, E.: Neurology 11:912, 1961. (3) Bray, P. F.: Pediatrics 23:151, 1959. (4) Chao, D. H.; Druckman, R., & Kellaway, P.: Convulsive Disorders of Children, Philadelphia, W. B. Saunders Company, 1958, p. 120. (5) Crawley, J. W.: M. Clin. North America 42:317, 1958. (6) Livingston, S.: The Diagnosis and Treatment of Convulsive Disorders in Children, Springfield, III., Charles C Thomas, 1954, p. 190. (7) Ibid.: Postgrad. Med. 20:584, 1956. (8) Merritt, H. H.: Brit. M. J. 1:666, 1958. (9) Carter, C. H.: Arch. Neurol & Psychiat. 79:136, 1958. (10) Thomas, M. H., in Green, J. R., & Steelman, H. F.: Epileptic Seizures, Baltimore, The Williams & Wilkins Company, 1956, pp. 37-48. (11) Good-

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# Determination of Inulin and Sucrose Space in Tissues Of Vitamin E-Deficient Rabbits\*

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Paper presented at the University of Arkansas School of Medicine in November at the meeting of the Southwest Section of the Society for Experimental Biology and Medicine.

NE OF THE MOST DRASTIC effects of a dietary lack of vitamin E is the development of muscular dystrophy in young rabbits. When four-week old rabbits are placed on a semi-synthetic vitamin E-free diet, they develop signs of muscular weakness approximately three weeks later. By the end of the fourth week they are usually so weak that they cannot even sit up, and death follows very soon. Muscular weakness disappears within a few days if a single large dose of  $\alpha$  -tocopherol (vitamin E) is given before the animal is in the moribund stage of the deficiency disease. As human muscular dystrophies cannot be cured by administration of vitamin E, this nutritional dystrophy of the rabbit cannot be considered as an experimental model of the disease in man. Nevertheless, one might hope that a detailed knowledge of the disease process in the nutritional dystrophy will eventually be useful in devising new approaches to the problem of hereditary muscular dystrophies.

Many attempts have been made to pinpoint a chemical lesion in dystrophic muscle by analyzing for the concentration of certain ions, enzymes, and metabolites in skeletal muscle tissue from vitamin E-deficient rabbits, and comparing the results with those obtained on vitamin E-supplemented rabbits. Interpretation of data so obtained is complicated by lack of knowledge concerning the

\*This investigation was supported by a research grant from the National Institutes of Health

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fluid compartment relationships in the dystrophic muscle. To illustrate this, one might mention the finding that the sodium content of dystrophic rabbit muscle is considerably higher than that of normal rabbit muscle. This could be caused by an increased uptake of sodium into the muscle cells—but it could just as well be the result of an increase in the extracellular fluid volume, as extracellular fluid has a much higher sodium concentration than intracellular fluid.

For the determination of the extracellular space of tissues, one usually employs non-metabolizable compounds that are incapable of penetrating into the tissue cells. Such compounds as the polysaccharide inulin are injected into the animal, and the inulin concentration in the particular tissue and in blood plasma is determined after equilibrium between plasma and extracellular fluid has been reached. The ratio of inulin concentration in the tissue to inulin concentration in the plasma is considered to be a measure of extracellular space. Intracellular space is calculated as the difference between tissue water content and extracellular space.

### Methods

In our own experiments we have used inulin and sucrose, both labeled with the radioactive isotope C<sup>14</sup>. This permits very simple and accurate determination of the concentration of these compounds in tissue and plasma by measuring radioactivity with a Geiger counter. Details of diet composition, experimental technique, and

number of animals in each group will be published elsewhere (1).

### Results

Figure one presents the results obtained in our experiments. Statistical analysis of the data indicated that extracellular space in dystrophic muscle, as measured by inulin and sucrose distribution, was significantly greater than in control muscle (P smaller than 0.05). There was a 60% increase in sucrose space and an 80% increase in inulin space. In liver, heart, and small intestines no significant difference between the two experimental groups was found (P greater than 0.05). Rabbits usually take in little food during the acute stage of the dystrophy. It might therefore be argued that the difference in skeletal muscle saccharide space is due to inanition rather than vitamin E deficiency per se. However, when vitamin E-supplemented rabbits were starved for 3 days prior to the inulin injection, the same muscle inulin space was found as in fed animals. Consequently, the greater inulin space of dystrophic muscle cannot be due to inanition.

The high inulin space of liver of dystrophic animals is surprising, as there is no corresponding increase in sucrose space. Individual variations in liver inulin space of both control and dystrophic rabbits were very great and the significance of the difference between these two groups is questionable (P=0.1). White and Rolf have postulated that macrophages concentrate inulin (2). The high inulin content of liver of dystrophic animals could possibly be a reflection of increased macrophage content. Since histological examinations of livers were not carried out in our experiments, this question remains open.

### Summary

Compared with vitamin E-supplemented control rabbits, sucrose and inulin space of skeletal muscle of vitamin E-deficient dystrophic rabbits were increased by 60 and 80%, respectively. This increase was not a result of inanition. Sucrose spaces of liver, heart, and small intestines and inulin spaces of heart and small intestines were unaffected by the deficiency disease. An increase in inulin space of liver of dystrophic animals was of questionable significance.

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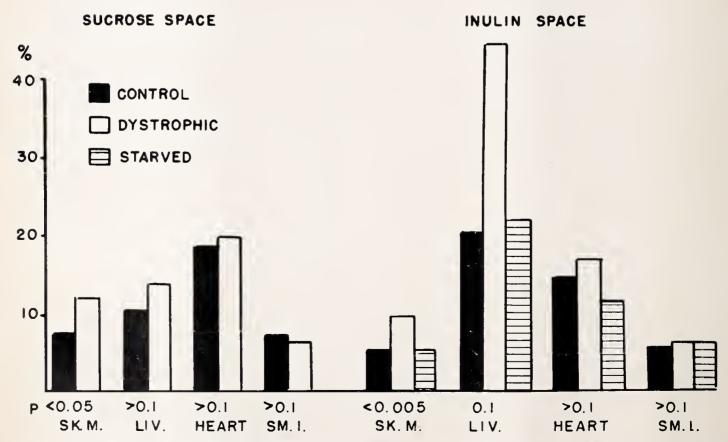


Figure 1. Sucrose and inulin space (as per cent of fresh tissue weight) in tissues of control, dystrophic and starved rabbits. SK. M. = Skeletal muscle, LIV. = liver, SM. I. = small intestines P = Probability that differences between control and dystrophic groups are due to chance (as calculated by the Student test).

# The Effect of Anaerobiosis and Metabolic Inhibitors On Glucose Uptake in Vitro

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Paper presented at the University of Arkansas School of Medicine in November at the meeting of the Southwest Section of the Society for Experimental Biology and Medicine.

Based on experiments of Randle and Smith<sup>1</sup> in which the glucose uptake of the rat hemidiaphragm was studied under conditions of anaerobiosis and in the presence of several cell poisons known to uncouple oxidative phosphorylation or to interfere with the generation of high energy phosphate bonds, it was postulated that insulin acts by removing a pump which actively keeps glucose out of the cell. In 1960 Tepperman<sup>2</sup> coined the term "keeper-out-ase" as a label for this theory of insulin action.

The theory is based mainly on Randle's conclusions which were as follows: (1) the entry of glucose into cells of the rat hemidiaphragm is restrained under basal conditions by a process dependent upon a supply of energy rich phosphate; (2) somehow insulin interferes specifically with the utilization of the high energy phosphate needed to maintain the barrier against glucose entry.

While some confirmation for these conclusions has come from workers using other systems, to the best of our knowledge Randle's experiments have not been repeated precisely as described. This we have undertaken to do.

The glucose uptake of hemidiaphragms was measured under conditions as similar to those of Randle's as possible. In addition we extended these observations to study the glucose uptake of the epididymal fat pad under the same conditions. In the first series of experiments we found that anaerobiosis did not stimulate glucose uptake in either bicarbonate buffered medium or in phosphate buffered medium, whereas, Randle had reported that anaerobiosis markedly stimulated glucose uptake of the hemidiaphragm. On

\*Graduate Student, Dept. of Physiology \*\*Professor and Head, Dept. of Physiology the other hand we found, as did Randle, that insulin had a markedly reduced effect in stimulating glucose uptake of either the fat pad or hemidiaphragm anaerobically.

The observation of Randle, that various uncouplers of oxidative phosphorylation stimulated glucose uptake to the same extent as did insulin, led us to attempt to repeat some of these experiments. The poisons that we used which did give the same effect that Randle obtained are as follows. In the hemidiaphragm in accord with Randle's data we observed stimulation with arsenite, cyanide, and arsenate. We failed to get any stimulation of glucose uptake with either azide or iodoacetate, and in contrast to Randle's report we got a marked decrease of glucose uptake with dinitrophenol instead of a marked increase as Randle reported.

Using the same cell poisons in the fat pad we found that DNP had no significant effect on glucose uptake. Arsenite and cyanide had no effect on glucose uptake as contrasted to the increase seen in the hemidiaphragm. Arsenate caused a significant stimulation of glucose uptake in the fat pad as it did in the hemidiaphragm. As in the hemidiaphragm azide had no effect on the fat pad. In contrast to the hemidiaphragm iodoacetate virtually abolished the glucose uptake of the fat pad.

When the hemidiaphragm was incubated with insulin in the presence of the various cell poisons, it was found that insulin was without effect in the presence of DNP and arsenite. In agreement with Randle insulin caused a significant increase in the presence of cyanide, arsenate, and azide. Insulin was not effective in the presence of iodo-acetate.

In the fat pad insulin was without effect on

glucose uptake in the presence of iodoacetic acid. Insulin was effective in the presence of arsenite, cyanide, azide, and arsenate.

From these preliminary data at least two conclusions may be drawn. There is a real difference in the response of these two tissues to the same metabolic cell poisons both with respect to basal glucose uptake and with respect to their response to added insulin *in vitro*. It is also apparent from these data that there are some areas of real dis-

crepancy with the work of Randle. The reasons for these discrepancies are not apparent, but perhaps the data on which the "keeper-out-ase" theory of insulin action is based should be investigated more thoroughly before a general acceptance is given to this theory.

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### Treatment of Trophocarcinoma (Embryonal Carcinoma) of the Testis

M. Friedman and A. J. Di Rienzo, *Radiology* 80:550 (April) 1963

Trophocarcinoma (embryonal carcinoma), is the most highly malignant germ-cell tumor of the testis; three-fourths of the deaths occurring within the first year. There is little relation between histological type and prognosis except for chorioepithelioma, which was fatal to all patients in this series. A direct relation was found between stage and prognosis. Only patients with no clinical or radiographic evidence of metastasis are potentially curable. Approximately 10% of trophocarcinomas are so small as to be difficult to detect. Cures of this variety are rare, as the diagnosis is usually based on widespread metastasis at the time of first examination. In patients without clinically detectable metastasis, surgical exploration disclosed metastatic trophocarcinoma in 62% of the cases. This is contrasted with approximately 12% for seminoma. The optimum tumor lethal dose for most trophocarcinomas ranges from 3,500 rads in 10 days to 4,500 rads in 40 days. These doses result in mild to moderate radiation injury of the gastrointestinal tract in 25% of the cases when cross-fire techniques are used. Supervoltage rotation irradiation has eliminated these injuries. Current treatment entails a preliminary test dose of 1,000 r to the testis, orchiectomy, retroperitoneal node dissection, and post-operative irradiation. There is growing evidence, however, that omission of the node dissection might increase survivals. Eight of 9 patients so treated have survived more than 5 yr. In 83 consecutive, unselected, pure trophocarcinomas,

the absolute 5-yr survival rate was 30%. Removing the chorioepitheliomas would increase this rate to 35%. Among 48 patients without clinically demonstrable metastasis, the 5-yr survival rate was 51%; excluding deaths from radiation injury, the survival rate would be 62%.

### Osmolar and Electrolyte Changes in Hemorrhagic Shock

D. K. Brooks, W. G. Williams, R. W. Manley, and P. Whiteman, *Lancet* 1:521 (March 9) 1963

Dogs were bled from the femoral artery so that their pressure was in the region of 40 mm Hg for 90 minutes when measured at the central aorta. Hemorrhagic necrosis of the bowel and other tissues occurred and the animals died. No tissue damage was produced in animals which were treated similarly but infused with hypertonic sodium bicarbonate or hypertonic saline during the period of hypotension, and the animals survived. The volume of fluid infused was estimated from the degree of acidosis produced in the control animals. The infusion of hypertonic glucose solution was not found to be as effective in preventing tissue damage as the hypertonic electrolyte solutions. The infusion of equivalent volumes of isotonic solutions was found to be ineffective. Maintenance of a raised osmolarity of the extra-cellular fluid appeared to be more important than the correction of the metabolic acidosis. It is indicated that tissue damage may be prevented by the infusion of hypertonic solutions which correct the metabolic acidosis, raise the plasma osmolarity and glucose concentration, and expand the extracellular fluid space.

# Effects of Diuretics on Intestinal Salt and Water Absorption in Vitro

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Paper presented at the University of Arkansas School of Medicine in November at the meeting of the Southwest Section of the Society for Experimental Biology and Medicine.

An In Vitro method for the study of intestinal absorption was used to determine the effects of several diuretic drugs on absorption of Na, K and water by rat intestine. Segments of intestine were removed, everted on a glass rod, partly filled with Ringer-bicarbonate buffer and tied off, then incubated in dishes containing buffer in a Dubnoff shaking incubator. After 90 minutes, the segments were removed, drained, and Na and K determined with a flame photometer. A carbonic anydrase inhibitor (Acetazolamide), a Phthalimidine (Chlorthalidone), and a Benzothiadiazine

(Hydrochlorothiazide) were studied. The drug was added to the buffer before incubation began. All inhibited the absorption of Na and water, but K uptake was decreased only slightly. A series of experiments in which NO<sub>3</sub> ion was substituted for Cl ion in the buffer was carried out to determine whether the effect of Hydrochlorothiazide might require the presence of Cl ion. Inhibition of Na and water absorption was also observed with this buffer. It was concluded that processes for intestinal absorption of Na and water resemble those in the nephron, and, that at least in the case of Hydrochlorothiazide, the effect is direct on the Na transport system.



### Morphogenesis of Pulmonary Emphysema

A. E. Anderson, Jr., A. Azcuy, T. Batchelder, and A. G. Foraker, *Dis Chest* 43:350 (April) 1963

A résumé of a continuing program of study of pulmonary emphysema is presented. It seems likely that a single process, essentially, inflammation of peripheral portions of the lungs with departitioning and interstitial alveolar fibrosis, could account for many, and possibly most, of the morphologic processes seen in emphysema. Emphysema is considered to be largely the result of an interplay between inflammatory and secondary mechanical factors. Dust is considered as a factor of secondary importance. In order to test the suggested hypothesis, parenchymal inflammation (nitric acid) and increased mechanical forces (intratracheal valve) were combined in dogs. The

resulting lung defect fulfilled standard morphologic definition of the disease in man.

### Etiological Factors in Fatal Complications Following Operations Upon the Biliary Tract

F. Glenn and C. K. McSherry, *Ann Surg* 157:695 (May) 1963

Analysis of 39 deaths that followed surgery for nonmalignant disease of the biliary tract among 2,358 patients over a 12-yr period (1950-1962) is compared to an earlier experience of 63 postoperative deaths among 3,439 patients operated upon over an 18-yr period (1932-1950). The over-all mortality rates were 1.8% for the first 18 yr and 1.7% for the more recent period. The principal cause of death in biliary tract surgery at the present time is associated cardiovascular-renal disease.

<sup>\*</sup>Assistant Professor, Ph.D.

### BIOASSAY OF LUTEINIZING AND LUTEOTROPIC ACTIVITY OF LH AND LTH BY A DIRECT METHOD;

### Preliminary Report\*

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Dental Branch, Texas Medical Center, Haustan, Texas.

> Paper presented at the University of Arkansas School of Medicine in November at the meeting of the Southwest Section of the Society for Experimental Biology and Medicine.

### Introduction

In "castrated" female mice, with ovarian tissue relocated in the anterior chamber of the eye, the action of follicle stimulating (FSH) and luteinizing (LH) hormones can be observed directly by the cyclic production of mature follicles and corpora lutea in the ovarian transplants. The action of luteotropic (LTH) hormone is also indicated by the sinusoidal hyperemia exhibited by the newly-formed corpora lutea for one or two days in each cycle.1 That this hyperemia is due specifically to LTH is shown by the fact that its duration is extended to approximately one week in pseudopregnancy,1 during lactation,2 in the prescence of anterior pituitary isografts,3 and as a result of the administration of exogenous LTH but not of FSH or LH.4 Further, the corporalutea are functional only when hyperemia is present<sup>3, 4</sup>.

Similar intraocular ovarian transplants in intact male mice develop mature follicles only,5 indicating that FSH is the only gonadotropin secreted in sufficient amounts to affect the ovarian morphology.

The bioassays in common usage for LH and LTH depend upon indirect responses, such as increase of ventral prostate weight in hypophysectomized male rats6 or ovarian ascorbic acid depletion in pseudopregnant rats<sup>7</sup> for LH, and pigeon crop gland development8 for LTH. The present report concerns initial studies on the use of luteinization of follicles and the duration of hyperemia of such follicles in ovarian isotransplants in male mice as a measure of the amounts of administered LH and LTH.

### Material and Methods

Each animal in groups of 6 intact male BALB/c or CE/BALB/c Fl hybrid mice received bilateral intraocular transplants of 1/8th of an isologous ovary.5 Each group, allowing for occasional infection of an anterior chamber, contained at least ten ovarian transplants. All animals were 3 to 5 months of age.

At the end of one month, all transplants showed one or more mature follicles. Each animal in four groups then received a single dose of 2.5, 5, 10 or 20 ug of purified LH,\* administered sub-

mation of the action of this gonadotropin. One other group received no exogenous hormone.

For estimation of the most effective vehicle and intervals of administration, twelve other groups received a single dose of 20 ug of LH to induce luteinization of the follicles. On the second day after this administration, each animal in three groups received 8, 40, or 200 ug of purified LTH respectively, given subcutaneously in buffered sterile saline every 24 hours for 8 days. Three other groups received the same type of administration, but half the total dose was given every 12 hours for the same period of time. A further three groups received the same administration of LTH in 15% gelatin vehicle every 24 hours; the remaining three groups received the same type of administration but half the daily dose was given every 12 hours.

For further estimation of the sensitivity range to LTH, four other groups were primed with a

<sup>\*</sup>Generously supplied by the Endocrinology Study Section, N.I.H. cutaneously in a 15% gelatin vehicle,\*\* for esti-\*Generously supplied by the Armour Pharmaceutical C., through the courtesy of Dr. P. L. Brule.

<sup>\*</sup>This work was supported by Research Grant CA -02080, U.S.P.H.S.

\*\*Professor and Chairman

\*\*\*Research Technician

\*\*\*\*Research Assistant; Department of Anatomy.

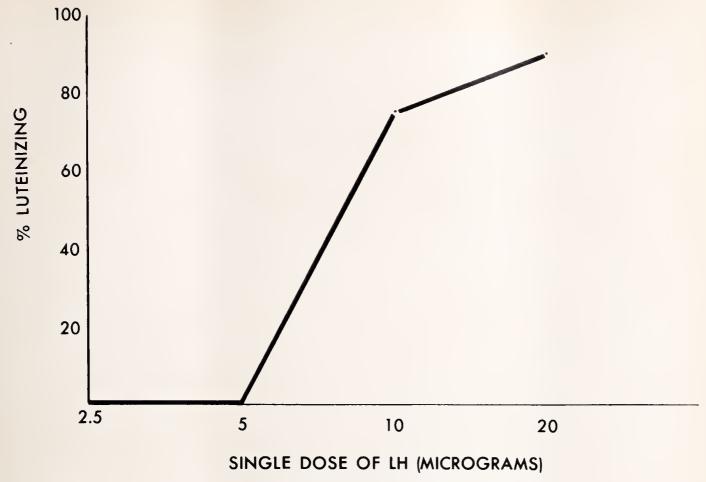


Figure 1. Percentage of transplants showing corpora lutea after a single dose of purified LH.

single dose of 20 ug of LH. Each animal in each group received 5, 10, 20 or 40 ug of LTH respectively, commencing two days later, and administered subcutaneously in 15% gelatin vehicle every 24 hours for 8 days.

Ovarian transplant morphology was recorded daily, by observations under a binocular dissecting microscope, for from three to seven days before administration of any gonadotropin until seven days after administration of LH alone and fourteen days after LH administration if this was followed by LTH administration.

LH action; Figure one

### Results

Luteinization of mature follicles commenced on the second day after administration and corpora lutea were fully formed by the third or fourth day. These corpora were white and opaque and did not exhibit a distinct hyperemia.

No luteinization was produced by the 2.5 or 5 ug doses but 75 and 90% of the transplants formed corpora lutea at the 10 and 20 ug doses respectively. In the subsequent experiments, administration of a standard dose of 20 ug for

priming gave luteinization in 90 to 100% of transplants.

LTH; vehicle and interval between administration; Fig. two.

Animals receiving 8, 40, or 200 ug of LTH in saline every 24 hours showed luteal hyperemia for a mean duration of 1.0, 1.2, and 2.8 days respectively. Those receiving the same daily total amount of LTH, but in half doses every 12 hours, showed a mean duration of hyperemia of 0.6, 2.1, and 6.6 days respectively.

Animals receiving 8, 40, or 200 ug of LTH in gelatin vehicle every 24 hours showed luteal hyperemia for a mean duration of 2.5, 5.4, and 5.0 days respectively; with the same total daily dosages, given every 12 hours, the mean periods were 2.4, 5.7, and 6.4 days respectively.

In all cases the luteal hyperemia appeared on the first or second day after the initial administration of LTH (*i.e.* as soon as corpora lutea were fully formed). The occasional transplant that did not exhibit luteinization in response to the priming dose of LH did not, of course, show hyperemia and such transplants were omitted from calculations.

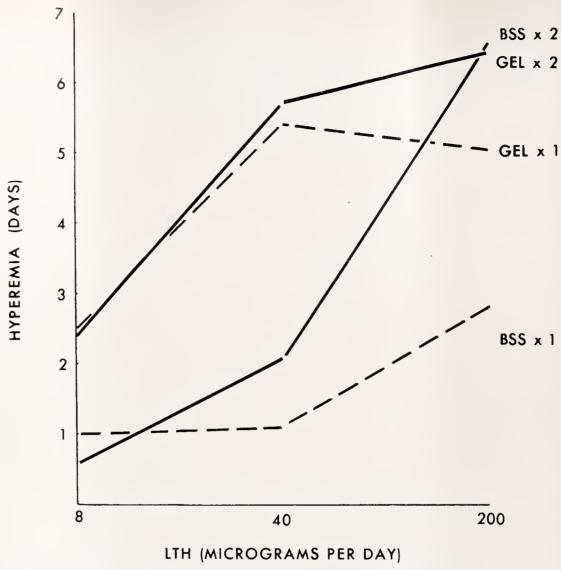


Figure 2. Duration of luteal hyperemia during administration of purified LTH at different dose levels, different time intervals, and in different vehicles.

LTH; sensitivity range; Fig. three.

Animals receiving 5, 10, 20, or 40 ug of LTH, in gelatin vehicle every 24 hours, exhibited luteal hyperemia for a mean interval of 1.2, 2.7, 4.1, and 5.5 days respectively.

### **Discussion**

The fact that no luteinization occurred with 5 ug of LH, but that there was a 75% response at 10 ug suggests that the action of this gonadotropin is an all-or-none type. The failure of a marked increase in response above 10 ug indicates that not all mature follicles are able to respond, possibly because of "over-ripeness". Increased sensitivity may be obtained by a route and vehicle of administration designed for faster absorbtion and this aspect is being investigated currently. The range of sensitivity compares favorably with that obtained by bioassay dependent upon increase of prostate weight in rats<sup>6</sup> but not with that of ascorbic acid depletion.<sup>9</sup>

The effectiveness of LTH administration. which gives a graded response and requires repeated administration, was distinctly increased by 12 hourly versus 24 hourly doses of the same daily amount when given in saline. However, delayed absorption of the gonadotropin, by administration in a gelatin vehicle, obviated this difference (of interval of dosage) and gave considerably increased sensitivity; a significant response was obtained over the 5 to 20 ug range. Increased sensitivity may be obtained by modification of the age and strain of mouse employed and of the vehicle of administration and these aspects are being investigated currently. The range of sensitivity compares favorably with the standard pigeon crop method but not with certain modifications of this.9 However, the specificity to LTH may be superior and the response is of a luteotropic type in a mammal rather than a "mammogenic" type in an avian.

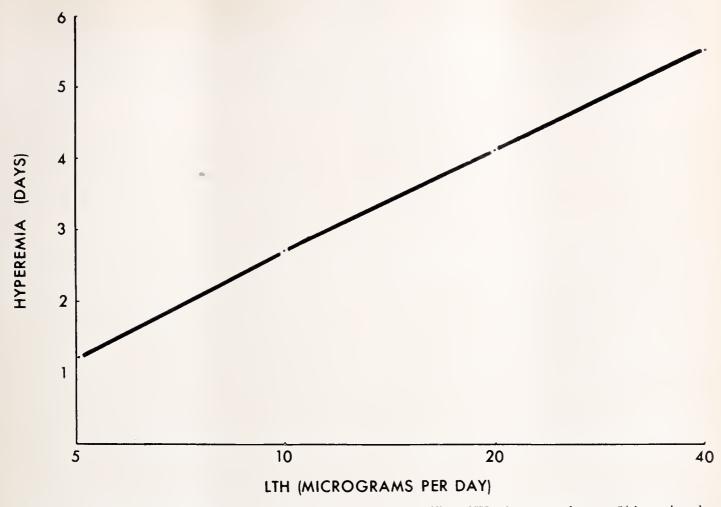


Figure 3. Duration of luteal hyperemia during administration of purified LTH subcutaneously every 24 hours in gelatin vehicle at different dose levels.

#### Summary

- 1. Mature follicles, but no corpora lutea, developed in intraocular ovarian isotransplants in intact male mice.
- 2. Corpora lutea formed in 75% of such transplants after a single dose of 10 ug of LH; no such response occurred after 5 ug of LH.
- 3. Such corpora lutea became hyperemic (indicating function) for 1.2 to 5.5 days when daily dosages of 5 to 40 ug of LTH were administered.

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## ENZYMES IN VALINE BIOSYNTHESIS IN CERTAIN **VOGES-PROSKAUER POSITIVE BACTERIA\***

Robert L. Wixom, Ph.D.\*\*

Paper presented at the University of Arkansas School of Medicine in November at the meeting of the Southwest Section of the Society for Experimental Biology and Medicine.

N INTERMEDIATE REACTION IN the biosynthesis of the amino acid, valine, is the dehydration of  $\alpha\beta$ -dihydroxyisovaleric acid to  $\alpha$ -ketoisovaleric acid. This keto acid undergoes transamination to form valine. A similar dehydration takes place in isoleucine biosynthesis. The enzyme, dihydroxyacid dehydratase, which catalyzes both of these conversions, has a widespread distribution in microorganisms (1) and higher plants (2). This distribution, along with other evidence, suggests that there is a single parallel pathway of valine-isoleucine biosynthesis in the various biological systems studied.

If this hypothesis is valid, then it should be possible to demonstrate other enzymatic steps in the pathway. In this regard, Aerobacter aerogenes and Serratia marcesens form acetoin (acetylmethylcarbinol, AMC) during fermentation—i.e. give a positive Voges-Proskauer color test. This acetoin is formed by decarboxylation of  $\alpha$ -acetolactic acid, which is also an intermediate in valine biosynthesis (3). A. aerogenes and S. marcesens were earlier found to possess the dihydroxyacid dehydratase (1). In the present paper, three other Voges-Proskauer positive bacteria were examined for the dehydratase.

#### **Experimental Procedure**

Stock cultures of Bacillus subtilis, Acetobacter rancens and Staphylococcus aureus were maintained by conventional procedures. Inocula were prepared by transfer of a small loopful of surface growth to the simple, chemically defined medium for each organism, incubated, centrifuged, washed and diluted. Their growth rate was determined from turbidity measurements of a growing culture in a small rocking tube at the desired temperature.

in one liter Erlenmeyer flasks with aeration, harvested during the log phase of growth by centri-. fugation, washed and ruptured by ultrasonic vibration or lysozyme digestion. After centrifugation, the extracts were assayed for dehydratase and protein concentration. For the dehydratase assay an aliquot of the cell-

For dehydratase assays, the organisms were grown

free extract was incubated with 0.02 M  $\alpha,\beta$ -dihydroxyisovalerate, pH 7.4, 0.02 M MgCl<sub>2</sub>, and 0.10 M Tris HCl buffer, pH 7.4, for 30 minutes at 37°C (1). After removal of protein, the concentration of keto acid product was measured by a dinitrophenylhydrazone color reaction. The dehydratase results are expressed in units of  $\mu$ moles of enzymically formed keto acid per 30 minutes per mg protein.

#### Results

Voges-Proskauer test-A pink color was observed in the standard qualitative creatine-potassium hydroxide test for the above three organisms. A. rancens gave a strongly positive color reaction.

Growth rate-Preliminary experiments indicated that the rates of growth of B. subtilis and A. rancens on their respective simple defined glucose-ammonium sulfate-salts-vitamins media were slower than on complex broth. Ordinarily S. aureus is considered to have multiple amino acid requirements, but may be trained to grow in the absence of valine or isoleucine or both from the medium. The strain of S. aureus used was found to have the same growth rate on nutrient broth, a defined medium containing 19 amino acids and a medium containing 17 amino acids (i.e. deficient in valine and isoleucine).

Dehydratase activity—The organisms were next grown on a larger scale in the same media to permit enzyme assays on cell-free extracts from log phase cells. For B. subtilis, extracts from cells grown on the simple, amino acid-free medium

<sup>\*</sup>This investigation was supported by research grant No. RG-6626 of the National Institutes of Health.

Presented at the Fall meeting of the Southwestern Section, Society for Experimental Biology and Medicine, Little Rock, Ark., November 9, 1962.

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Table 1. Effect of growth media on the dihydroxyacid dehydratase of microorganisms.

Specific o	clivity (m	ales Leto aci	d/30 min	mg protein	
		Val·Ileu absent			
Nitrogen source of medium		Mixture of 19 amino acids		Mixture of 17 amino acids	
Microorganism					
Bacillus subtilis	0.07	****	0.43		
Acetobacter ranceus	0.43	0.00	0.53		
Staphylococcus aureus	0.04	0.99	****	2.60	

had a six-fold greater specific activity than that from the complex broth (Table I). Cells of A. rancens from the medium containing ammonium sulfate as the nitrogen source gave extracts with a small increase in specific activity over those from the casein hydrolyzate medium. Finally, the extracts from S. aureus grown on the complex nutrient broth had a very low dehydratase concentration. Extracts from cells harvested from the defined medium in the absence of valine and isoleucine had a 2.5-fold greater specific activity than that from the complete medium containing 19 amino acids.

The extract with greatest potency from each organism was also tested for its substrate specificity. Each extract also catalyzed the dehydration of the isoleucine intermediate,  $\alpha,\beta$ -dihydroxy- $\beta$ -methyl-n-valeric acid, at a slower rate than the dihydroxy analogue of valine.

#### Discussion

The biosynthesis of amino acids has been under active investigation for the past decade. The reactions in the formation of valine are: a condensation, rearrangement of the carbon chain and reduction, dehydration and finally transamination to give valine (Fig. 1). A similar series of steps is found in the biosynthesis of isoleucine. Such reactions are supported by evidence from microbial mutants, radioisotope studies, and more recently by demonstration of the enzymes in *Neurospora crassa* (a mold), *Escherichia coli* 

(a bacterium) and Saccharomyces cerevisiae (baker's yeast).

Although the theme of unity in biochemical processes has wide experimental support, recent research by other investigators has demonstrated that the bacterial pathway for lysine biosynthesis differs from that in molds. Two synthetic routes for ornithine formation are also known. E. coli possesses alternate pathways for formation of the methyl group of methionine. With this background of heterogeneity, a search for possible alternative pathways of valine and isoleucine biosynthesis was undertaken in biological systems other than the classical organisms of E. coli, N. crassa and S. cerevisiae. The assay for the enzyme, dihydroxyacid dehydratase, has been used as a tool to detect a specific pathway in other living forms. This dehydratase was absent from the tissues of seven species in mammals, three birds, two reptiles, two amphibia, two fish and six lactic acid bacteria (1). It was present in 29 higher plants from 14 families (2), a green algae (2) and seven more bacteria and two more yeasts. These results were consistent with an inverse correlation of the presence of the dehydratase and a nutritional requirement for valine as an essential amino acid. The three organisms studied herein extend the evidence for this nutritional correlation.

Furthermore these bacteria provide evidence for two intermediates in the valine pathway. Acetoin has long been known as a product of carbohydrate fermentation for certain bacteria and is the basis of the Voges-Proskauer test. Using A. aerogenes extracts Juni (3) demonstrated that bacterial acetoin synthesis proceeds by the initial condensation of pyruvate and an acetaldehydethiamin pyrophosphate complex to form  $\alpha$ -acetolactic acid and then the enzymic decarboxylation of this intermediate to acetoin. Juni also found

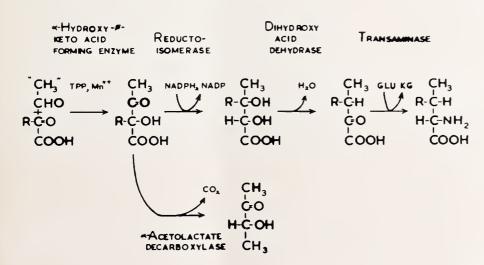


Fig. 1. Probable sequence of reactions in value biosynthesis  $(R \pm CH_3)$ , isoleucine biosynthesis  $(R \pm -CH_2 CH_3)$  and acetoin formation (bottom compound) in bacteria studied herein.

this acetolactate decarboxylase in other Voges-Proskauer positive organisms, namely S. marcesens, B. subtilis, and S. aureus, which suggested that these organisms can also form acetolactate. De Ley (4) has shown directly the enzymatic formation of  $\alpha$ -acetolactate in A. rancens. The presence of the deliydratase in A. aerogenes and S. marcesens was reported earlier (1). These relationships, summarized in Fig. 1, suggest that acetolactate is serving as an intermediate in both valine biosynthesis and acetoin formation in these organisms. By contrast, E. coli is Voges-Proskauer negative, does not have the acetolactate decarboxylase, but does have the dihydroxyacid dehydratase. Streptococcus faecalis has the opposite result for these three criteria. Hence only Voges-Proskauer positive bacteria with the dehydratase have the dual role for acetolactate.

#### Summary

While acetolactate and acetoin have been known for some time in carbohydrate fermentation, the demonstration of the dihydroxyacid dehydratase in five Voges-Proskauer positive bacteria indicates that acetolactate may also function as a step in valine biosynthesis.

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#### Seminoma

G. C. Johnson, Radiology 80:539 (April) 1963

An analytic review is presented of 56 cases of seminoma of the testis, with particular reference to the areas of tumor extension and the reasons for failure to cure. The following conclusions are drawn: (1) Seminoma is a consistently radiosensitive tumor. Local control of the disease may be anticipated by doses in the range of 2,000 to 3,000 r delivered via standard orthovoltage techniques over treatment periods of 4 to 6 weeks. (2) Failure to cure seminoma by irradiation can be explained in almost every instance by inadequate coverage of areas demonstrably or potentially involved by tumor. (3) When seminoma is shown in any region, irradiation in effective dosage should be delivered to both that region and to the next successive area of lymph node drainage. (4) Neither volume nor extent of tumor involvement is a contraindication to intelligent aggressive radiation therapy, which will be rewarded by an unbelievably high cure rate. Seminoma is radiocurable in every case if areas of tumor involvement are accessible to effective doses of irradiation. This condition is met in nearly every instance.

#### Massive Cardiac Hypertrophy: Report of 15 Hearts Weighing 1,000 Gm or More

C. Peña, Amer J Cardiol 11:18 (Jan.) 1963

A series of 15 hearts weighing 1,000 gm or more is discussed. Fourteen of these were found among 11,595 consecutive autopsies (1 in 828). The principal associated lesions were hypertension, syphilitic aortitis with aortic insufficiency, rheumatic heart disease, chronic adhesive pericarditis with mediastinopericarditis, endocrine disorders (in a patient with acromegaly), and arteriosclerosis. Congenital cardiovascular malformations may also be a factor in producing extreme cardiac hypertrophy, although none were found in the present series. Kidney disease was present in 11 patients, arteriolar nephrosclerosis in 9, and subacute glomerulonephritis in 2 (both of whom had also syphilitic aortic insufficiency). Cardiac failure was recorded clinically in 11 patients and angina in another. In 2 patients evidence of chronic passive congestion of the lungs was found at autopsy. Extreme cardiac hypertrophy occurs with striking predominance in men. Other workers related strenuous work to the degree of cardiac hypertrophy; this factor would partially explain the sex distribution.

## A Mutation in the Mouse with Variable Expression Causing Chorea and Tail Abnormalities

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Paper presented at the University of Arkansas School of Medicine in November at the meeting of the Southwest Section of the Society for Experimental Biology and Medicine

Two years ago two mice with short tails and a "waltzing" behavior appeared in a litter from a strain of mice being maintained for the quivering (qv) gene. No mice could be produced from these two, but by breeding from the parents and subsequent litters about 100 mice of this variant have been produced. Figure 1 illustrates the phenotypic appearance of those most severely affected. The tail is quite short and tightly curled usually with a slight globular termination enclosing a number of small poorly formed caudal vertebrae. Some, however, have tails less severely

affected, exhibiting a less shortened tail, a looped tail of normal length or only a permanent curve or bend in the tail. Also the degree of chorea is variable resulting in extreme circling both clockwise and counterclockwise, increased activity and "pacing" in the cage with the performance of back flips, merely holding the head to one side or no chorea at all. The chorea has only been seen in animals with definite shortening of the tail. The tail condition is present at birth and the chorea can often be illicated before the eyes are open.

In comparing this deviant to the many tail deviants in the mouse only two were found which have chorea as one of the effects. This mutant differs from both of these. Shaker short (now extinct) has a tail ending in a terminal filament devoid of vertebrae which is not true in the present mutation. In addition it is produced by a recessive mutation which again is not true in the condition being reported. Kinky, one of the alleles in the Brachyury series, results in waltzing behavior in about 1/4 of affected mice and in a few normal tailed mice, some of which were proved genetic kinkys by breeding results. Kinky mice also have thoracic, lumbar and sacral vertebrae affected and as many as five ribs fused. The present mutation affects some of the tails more severely than kinky, but has no particular effect on the thoracic, lumbar and sacral vertebrae and rib fusion has not been seen. So while this condition may be a new member of the Brachyury series it does not appear to be an allele already described. Kinky is inherited as an irregular autosomal dominant lethal when homozygous. The present condition has an irregular inheritance also as is shown by reference to Table 1.

Ninety-six affected mice were produced in a

\*Associate Professor



FIGURE 1

Illustration of a new mutation in the mouse showing the tail abnormality and "sniffing" attitude characteristic of the waltzing behavior.

affected mated to affected reciprocal crosses of affected by normal and normal mated to normal. Phenotypes in the reciprocal crosses are of two indistinguishable genotypes producing some latitude in the ratios. In the last class at least one affected mouse had to be produced before litters from a normal pair were included in the data. The observed ratios of affected to normal are neither compatible with an autosomal recessive or dominant gene nor with a lethal dominant gene as the causation of this condition. Litter size indicates some loss of reproductive fitness in

the affected mice. The possibility of a differential loss of affected mice in gestation or later is being investigated as well as the nature of the genetic transmission of this character.

Dr. H. A. Hartmann of the Department of Pathology, University of Wisconsin has produced mice with short tails and choreic behavior by injection of a nitril. He is comparing the present deviant with these mice as to appearance and possible similar pathology. If they are close phenocopies they will be of greater medical interest. (Supported by USPHS NB-01147(07))

TABLE 1
DATA FROM DIFFERENT BREEDING CLASSES

Breeding Class	Observed			Expected Ratios For: Dominant Dominant			Average Ratio Cho		Choreic	
	Total	Affected	Normal	Ratio		Recessive	lethal	Litter size	in	Affected
Affected x Affected	76	37	39	1:1	1:0	1:0	2:1	4.1		1:4
Female Affected x Male Normal	84	28	56	1:2	1:0-1	0-1:1	1:1	4.6		1:1
Male Affected x Female Normal	54	9	45	1:4	1:0-1	0-1:1	1:1	4.8		1:1
Normal x Normal	139	22	117	1:5	0:1	1:3	0:1	5.4		1:4
TOTAL	353	96	257							1:3



#### Mallory-Weiss Syndrome: A Commonly Overlooked Cause of Upper Gastrointestinal Bleeding

W. O. Dobbins, III, Gastroenterology 44:689 (May) 1963

Hemorrhage from gastroesophageal lacerations caused by vomiting is known as the Mallory-Weiss syndrome. A review of the literature is presented and 3 new cases are reported. These lacerations may follow any event that brings about a marked increase in intra-abdominal pressure, such as vomiting, coughing, straining at stool, blunt external trauma, etc. It appears that this syndrome is frequently unrecognized in many patients with self-limited gastrointestinal bleeding. Only those cases requiring surgery or endoscopy have been recognized to date and reported as "rare" examples of Mallory-Weiss syndrome. This syndrome should be looked for in any patient with upper gastrointestinal bleeding and a history of vomiting or straining before bleeding.

#### Viruses and Cancer: Review

G. H. Porter, Arch Intern Med 111:572 (May) 1963

Evidence establishing viruses as one cause of cancer in animals is presented, and human studies are critically examined. Emphasis is given to murine leukemia and its potential relevance to man. The electron microscopy, mode of replication, chemistry, immunology, and ecology of the known tumor viruses are discussed, as well as the conditioning factors of heredity, age, hormonal status, and dose. Major hypotheses for mechanisms of viral carcinogenesis are given. Although facts which would establish a viral etiology of human cancer are yet lacking, it would seem biologically unusual if the ability of viruses to induce malignancy in other mammalian species was not also operative in man. Impressive success in animal studies indicates the urgency for intensive exploration of the human problem. An extensive bibliography is included.

# Malonyl-Coenzyme A As An Intermediate in Fatty Acid Synthesis by Skeletal Muscle Mitochondria\*

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Paper presented at the University of Arkansas School of Medicine in November at the meeting of the Southwest Section of the Society for Experimental Biology and Medicine.

#### **ABSTRACT**

A PARTICULATE SYSTEM FOR THE synthesis of long-chain fatty acids was discovered in the mito-chondria of skeletal muscle. Using a preparation from the superficial pectoral muscle of the New Hampshire chicken, a detailed analysis was made of the system.

Acidic conditions (pH 6 to 7) and a reaction temperature of 37°C were used to obtain a maximum rate of synthesis. This rate was also influenced by the substrate and enzyme concentrations and the length of time the reaction was allowed to proceed. Aerobic conditions and the addition of long-chain fatty acids both inhibited the system. The relative amounts of the products formed were also influenced by certain environmental conditions.

Coenzyme A, adenosine triphosphate (ATP) and citrate were required to incorporate acetate into fatty acids; the metal involved was manganese. Both the absence of bicarbonate and the addition of avidin retarded synthesis. Malonyl-CoA was incorporated five to seven times faster than acetyl-CoA but required the presence of at

least some acetyl-CoA. When malonyl-CoA plus acetyl-CoA served as the substrate, ATP was no longer required. The system was capable of synthesizing malonyl-CoA from acetyl-CoA in the presence of bicarbonate, ATP and biotin. The evidence indicates that, similar to the cytoplasmic system, malonyl-CoA is the source of most of the carbon atoms of fatty acids synthesized by the mitochondrial system.

The occurrence of the mitochondrial system is limited neither to skeletal muscle nor to the class Aves. It is possible, therefore, that the system is ubiquitous since it was found in every tissue and animal investigated, namely, the superficial pectoral muscle, adductor muscle, kidney, liver, heart, brain, testis, ovary and adipose tissue of the chicken; the superficial pectoral muscle of the genetically dystrophic chicken, Japanese quail, goose and sea gull; the adductor muscle from the mouse and rat and the intercostal muscle of the horse.

On a whole animal basis, the mitochondrial system of the muscle was calculated to account for nearly as much fatty acid synthesis as the most active system in the body, which is the liver cytoplasmic system.

<sup>\*</sup>Supported in part by a USPHS Grant
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### TOWARD BETTER SCARS

Harry Hayes, Jr., M.D.\*

Any direct injury to the skin, whether accidental or intentional, which involves the full thickness of the skin will produce a scar. The problem is how to obtain the finest and least conspicuous scar possible. The problem may be a secondary one when dealing with ordinarily covered portions of the body but is of the utmost importance when the face or another exposed area is involved. The finesse with which fresh wounds or existing scars are handled today has resulted in a greater awareness on the part of many patients as to what can be accomplished and a consequent reluctance to accept a bad scar.

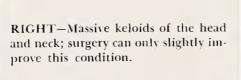
A rational approach to surgery directed at obtaining the maximum cosmetic result requires an understanding of the normal process of wound healing. This subject has been discussed in detail in several recent publications.<sup>1,2</sup> In uncom-

plicated healing of closed wounds (i.e., by primary intention) the opposed edges of the skin and obliterated wound cavity are sealed together in a few hours by a plasma and tissue transudate influx. This organizes into a fibrin matrix which is then invaded by white blood cells and histiocytes which by phagocytosis and autolysis remove any devitalized tissue, organisms and foreign bodies (the "lag" or latent phase). Over the next several days this matrix is invaded by capillary buds from the walls of the wound which coalesce to establish a functioning circulation to supply the nutrients and remove the waste products (the hypertrophic phase). The epithelium is regenerated from the basal cell layer within 1 mm. of the wound edge by a greatly increased mitotic rate (the epithelialization phase). The fibrous matrix then differentiates into mature

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LEFT-Hypertrophic scarring at the most florid stage. These scars will resolve considerably over the next few years.





#### HARRY HAYES, JR., M.D.



LEFT—A depressed scar of the right side of the forehead following an injury.



RIGHT—Repair by means of utilizing the underlying tissues and incorporation of a z-plasty in the skin closure.



LEFT-A depressed fracture of the left zygoma which, if not corrected, would leave an ugly contour defect.



RIGHT-Result following elevation of the left zygoma through an incision in the temple.



Trying to avoid skin grafts on the face; an adherent scar near the left outer canthus producing pull on the eyelid.



Excision and replacement by an interpolated flap from the temple.



The final result.



A traumatic tattoo (a dirt-ingrained scar).

Secondary correction.

collagen which gradually condenses and the wound develops some tensile strength (the contraction phase).

The usual resolution time is 3 to 6 months; this may be considerably longer in infants and children and shorter in adults and the elderly. It is a mistake to attempt to improve the scar during the hypertrophic phase and strong pressures to do so should be resisted. Once the scar is settling down the final task is usually much simpler. Certain measures which favor primary wound healing and may hasten scar maturation are useful before and after definitive surgery but once an ugly or unstable scar is established there is no satisfactory method of treatment except operative.

After deciding upon the proper time for surgery the next consideration is whether there is any excess or deficiency of tissue in the scar. Most simple scars can be approached directly without distortion of adjacent features or areas and closed without excessive wound tension. Complex scars may require replacement by local or distant flaps or skin grafts. It is best to excise or "open up" the existing scars to visualize an actual defect; when a scar has contracted considerably this defect may reach surprising proportions.

Many descriptive terms are applied to scars; the useful ones are listed in Fig. 1. The most important distinction is that between a hypertrophic scar and a keloid; this may be difficult but certain helpful features are listed in Fig. 2. Both the prognosis and therapy depend upon an accurate diagnosis.

The general principles are the same as for general surgery with the emphasis on meticulous



A linear scar of the cheek.



Scar virtually invisible after excision with z-plasty.

#### HARRY HAYES, JR., M.D.



LEFT—Illustrating the principle of concealing the incision in a case of gynecomastia.



RIGHT—The incision made within the areola is invisible.



A dog took off the tip of this finger; this lady made lampshades and required a resilient finger tip to do this work.



The finger tip was reconstructed by a cross-finger flap and a split-thickness skin graft to the flap donor site.



The final result.



LEFT-A loss of skin only of the finger tip.



RIGHT—The result after a splitthickness skin graft; it is only necessary to replace that which has been lost.

technique, atraumatic handling of tissues, an unhurried attitude, use of the minimal number of buried absorbable sutures and use of the finest skin sutures required to close the wound (usually 5-0 and 6-0). The type of skin sutures is a matter of individual preference so long as the material is relatively non-reactive. The skin sutures should be removed as early as possible to avoid cross-hatched scars. The heavier sutures are removed

first; a useful guide is to remove a suture and watch for a drop of blood to appear at the puncture wound; if none appears, most or all of the sutures of that size can be removed.

The best scar repairs are done using local tissues which have the same texture, thickness and coloring as the adjacent skin and which avoid residual circular or rectangular scars. This includes excision and direct suture, repeated serial

	FIGURE 1. Types of scars and a note on the tr	atment of each.		
Type of scar	Definition	Treatment		
Fresh	A scar of recent origin	Delay surgery; reassess later		
Immature	A scar which has not completed the maturation process	Delay surgery; reassess later		
Mature	A scar which has completed the matura- tion process; usually pale and flat	Depending upon the deformity		
Pigmented	A scar containing endogenous or exogenous pigments (i. e., a dirt-ingrained posttraumatic tattoo)	Excision; abrasion		
Hypertrophic	See Fig. 2.	Usually nonoperative; see text		
Keloid	See Fig. 2.	Intramarginal excision and suture or s graft; systemic cortisone and sometic x-ray postoperatively		
Tight, contracted	A scar which is contracting or has com- pleted contraction; may cause limitation of motion if it overlies a joint	Z-plasty, local flaps, skin graft; may require distant flaps.		
Postradiation	Self-explanatory	Beyond the scope of this text		
Posttraumatic	Self-explanatory	Depending upon the deformity		
Postoperative	Self-explanatory	Z-plasty, local flaps, skin graft		
Burn	Self-explanatory	Depending upon the deformity		
Depressed	A scar in which the base lies below the level of the surrounding skin	Excision, repeated (serial) excision in stages, dermisfat or fascia graft to restore normal contour		
Adherent	A scar attached to deeper structures (usually bone or tendon)	Excision and replacement by a flap or a graft		
Trapdoor	A scar in which the original injury pene- trated the skin in a semicircular fashion or involved three sides of a square and con- tracture and inadequate drainage have ele- vated the central portion	Excision with multiple z-plasties and defatting of the central portion		
Webbed	The same as webbing (as in a cleft)	Z-plasty, local flaps		
Tender or Painful	A symptomatic scar, often subjected to pressure as in a finger tip	Skin graft or local or distant flap		
Unstable	A scar consisting of unhealthy skin often caused by healing by second or third in- tention and which may overlie a moving part or be subjected to repeated pressure	Skin graft, or, more likely, a flap		
Circumferential	A scar encircling an extremity	Multiple z-plastics or concertina operation in stages		
Potentially or frankly malignant	A Marjolin's ulcer (malignancy) arising in a neglected, unstable scar (i. e., burn)	Beyond the scope of this text		

#### HARRY HAYES, JR., M.D.

FIGURE 2. Distinction between a hypertrophic scar and a keloid

	A. Helpful in ordinary clinical practice					
	Hypertrophic scar	 Keloid				
Usual precipitating event	A significant injury, e.g., burn, surgery	Either a significant or a trivial injury				
Racial predilection	Commonly caucasian	Negro				
Age predilection	Infants, children and young adults	Adults				
Appearance in later stage	Pale, less raised, less vascular	Nodular, firm consistency				
Infection within the scar	Rare	Common				
Direct extension to involve previously normal adjacent skin	Never	Almost always				
	B. Less helpful in ordinary clinical p	ractice				
Favored sites	Face, chin, shoulder, presternal area	Face, chin, shoulder, presternal areas, ear lobes				
Early Symptom	Prurities	Pruritis				
Appearance in early stage	Raised, florid, highly vascular	Raised, florid, highly vascular				
Microscopic diagnosis	Not distinctive	Not distinctive				
Etiology	A normal phase of scar maturation; the cause of persistence of the hypertrophism is unknown	Unknown; several recent theories: poor lymphatic drainage and presence of kera- tin in lanugo hair				
Phase contrast microscopy of tissue culture <sup>6</sup>	No type 2 fibroblasts	Type 2 fibroblasts in 91-92%				

excision and direct suture in stages, z-plasty, V-Y plasty, and local flaps advanced, rotated or transposed into the defect. With these procedures a "dog's ear" may occur at one or the other extremities of the wound and judgment is required as to whether to excise it at the time or to wait until another time. The goal is to place the inevitable residual scars in the least conspicuous location and parallel to the lines of skin tension as shown by Kraissl and Conway in Fig. 3. A corollary of this is to avoid vertical scars overlying joints.

When the scar involves deeper tissues, these layers must be coapted accurately. This is seen in full thickness repairs of the lip and in the neck where suture of the platysma will take much of the strain off the skin edges.

There are several special situations which merit comment. The diffuse pitted scarring of the face following acne or smallpox can be improved by an abrasion using a rotating cylinder or ordinary sand paper. Inversion<sup>3</sup> recommends outlining

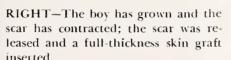
the deeper scars to be excised followed by abrasion, excision and suture. For the extensive hy-



Fig. 3. Reproduced with permission from Kraissl and Conway: Excision of small tumors of the skin of the face with special reference to the wrinkle lines. Surgery 25: 595, 1949.



LEFT—An injury of the little finger in childhood; the soft tissues were filetted and inset into the palm.





pertrophic scar which does not involute completely Hynes<sup>+</sup> shaves or excises the scar down to the dermis and then applies a skin graft. A slight modification of this is the intramarginal excision of a keloid and then either direct suture or application of a skin graft to the base and edges of the keloid. Keloids should always be done under general anesthesia to avoid the risk of additional keloid formation at the site of injection of the local anesthetic.

Traumatic tattoos result from dirt-ingrained wounds and are difficult to remove completely; every effort should be made to remove all foreign material at the time of original wound closure. Decorative tattoos usually require excision of the full-thickness of the skin and replacement by a full-thickness or split-thickness skin graft.

A detailed discussion of the management of

adherent and unstable scars is beyond the scope of this presentation. These scars can occasionally be handled by skin grafts but more commonly require some type of flap coverage (such as a cross-arm or cross-leg flap) containing a nourishing pad of subcutaneous fat which also prevents subsequent contracture.<sup>5</sup>

The postoperative care is of some importance. Splinting by means of mechanical devices or bulky dressings helps reduce local edema and is useful in the early phase but prolonged splinting is ineffectual. The same applies to butterfly or collodion dressings. Supplemental vitamins (especially vitamin C) and a high protein diet may be indicated. Lanolin and/or cold cream massaged into the fresh scar may hasten the softening. X-ray therapy in the range of 500-700 r is reserved for highly selected cases in which a prolonged



A congenital constricting band of the leg.



The "concertina" operation: excision of the band and closure of the defect with a staggered suture line.



The final result.

hypertrophism of the scar does, or might be expected to, occur. Antihistamines and testosterone have been used but without much success. Cartilage implanted into the wound has been shown experimentally to cause some increase in the

tensile strength in the early phase of healing. The injection of cortisone into hypertrophic scars seems to have little measurable effect. In some painful scars the injection of procaine may be effective. Physiotherapy is not useful in the



LEFT—A tight burn scar extending across the wrist; several attempts at excision and skin grafts had failed.



RIGHT—The scar was excised and the defect covered with a direct abdominal flap.



LEFT—The healed donor site of the abdominal flap.



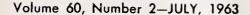
RIGHT—The abdominal flap was detached in 2 weeks and the transplanted pad of subcutaneous fat prevented a contracture.



LEFT-A tight burn scar of the axilla.



RIGHT—The complete release of the scar when multiple z-plasties are incorporated in the repair.





LEFT-A postoperative vertical scar overlying the tendo Achilles; prolonged hypertrophism of the scar has occurred.

RIGHT—The much better result with hardly any hypertrophic scar when a z-plasty is included to break up the line of pull.



majority of scars but may help where a contracture is anticipated.

#### Summary

The general principles of the surgical management of scars has been presented. Suggestions have been made as to methods of preventing and improving unsightly and unstable scars.

The cases illustrated were done while the author was Assistant Resident and Chief Resident in Plastic Surgery in The New York Hospital-Cornell Medical Center and Senior Registrar in Plastic Surgery in The Queen Victoria Hospital, East Grinstead, Sussex, England.

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LEFT-A fresh wound of the leg.

RIGHT—The central flap was of doubtful viability and was sacrificed to allow primary closure in a straight line.



#### HARRY HAYES, JR., M.D.



LEFT—An old war wound of the thigh with ulceration of the lower part of the scar.

RIGHT—Excision, rotation flap and skin graft to donor site; the remainder of the scar could be repaired if necessary.





LEFT—A rather unsightly scar of the thigh in a young girl.

RIGHT-Correction by means of excision and repair of the underlying tissues.





LEFT—The principle of gradual partial excision of a scar; the example is that of a large hairy mole of the thigh.

RIGHT—Result after the first and before the last excision, the final result if often better than when a graft is used.



Volume 60, Number 2-JULY, 1963

#### TEACHING SEMINAR

University of Arkansas Medical Center Little Rock, Arkansas



## OF THE EYE AND ORBIT

With a Case Report of a Teratoma of the Orbit

Sam T. Jones, M.D.\*

Dermoid cysts are found in the eyelids and eyebrows rather frequently; solid dermoid tumors are occasionally seen on the surface of the eyeball; dermoid cysts and teratomas are rarely located deeper in the orbit. In 1937 New and Erich, analyzing a large series of dermoid cysts seen at the Mayo Clinic, reported that half the cysts which occurred about the head and neck regions involved the eye or orbit. They felt that it was "not surprising that a greater percentage of these cysts occur in the orbital region than elsewhere about the head and neck when one considers the complexity of the embryonic development of the eyes and lids." Orbital teratomas are rare, only 32 cases having been reported.

In this paper the author will discuss certain diagnostic and therapeutic aspects of these tumors, based mainly on his own experience.

#### Dermoid Cysts of the Lids and Brow

A smooth rubbery or cystic mass in the lids or brow of a child should arouse suspicion of a dermoid cyst. In most cases the mass is noticed by the parents during the first year of the baby's life. It is most frequently located above and lateral to the eyeball (Fig. 1). The skin overlying the tumor is freely movable, but because of fibrous attachments to the periosteum, the cyst itself is usually fixed. Sometimes it is situated in a shallow bony depression.

On gross pathological examination, periorbital dermoid cysts are like dermoid cysts elsewhere:



FIGURE 1

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they usually contain a cheesy or brownish pasty material, sometimes with a number of long black hairs. On microscopic examination the wall is composed of an outer fibrous capsule and an inner layer of epidermis; sometimes there are hair follicles and sebaceous glands.

Of ten patients that I have seen with periorbital dermoid cysts, the youngest was 7 months old; the oldest 7 years. In all cases surgery was performed within a few weeks of the first visit. The cysts varied from 1 to 2.5 cm. in their greatest diameter, and were surrounded by a fairly thick fibrous capsule. In seven cases an attempt was not made to remove much of this fibrous tissue, and the tumor was excised intact. In three cases in which an attempt was made to dissect down to the "yellow cyst wall," the cyst ruptured. Although the wound was slightly soiled with the contents, healing was uneventful.

To avoid the unpleasantness of removing sutures from these children, the incision was closed with a continuous subepithelial strand of 5-0 chromic catgut. The edges of the incision were kept in good apposition by pulling on both ends

of this suture and then applying collodion to the exposed portion. The suture was easily pulled out after a week or 10 days with little or no discomfort to the patient. In all cases healing occurred with very little scarring.

#### **Limbal Dermoid Tumors**

The limbus is the most common location of dermoids of the eyeball itself. Limbal dermoids are solid tumors composed of dermal elements: stratified squamous epithelium, hair follicles and sebaceous glands. When fatty tissue is a prominent component of these tumors, the term dermolipoma is applied. Limbal dermoids are sometimes found in children with other congenital anomalies, chiefly malformations of the eyelids, ears and mandible.<sup>5,6</sup>

The clinical appearance of a limbal dermoid is shown in Fig. 2A. The tumor is typically an elevated, gray or yellow, oval mass straddling the limbus. When examined with magnification a few fine hairs can usually be seen on its surface. There is frequently a small opaque arc of lipoidal material in the cornea adjacent to the tumor. In five cases that I have examined gonioscopically,

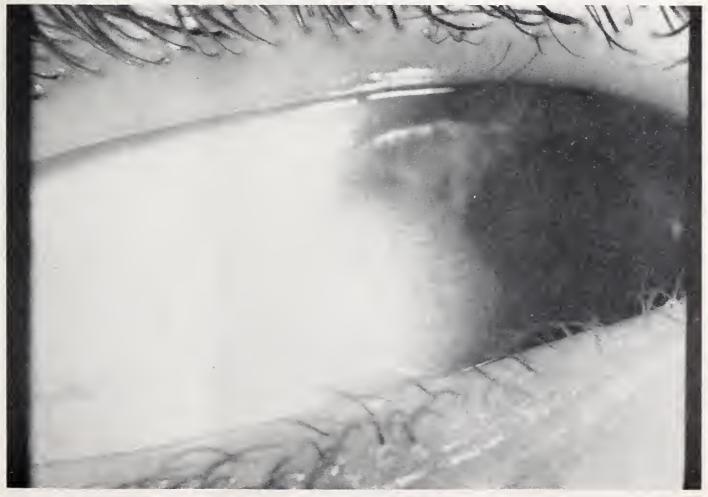


FIGURE 2A

the tumor did not extend completely through the limbus into the chamber angle.

The indications for surgical excision of a limbal dermoid are: (1) The tumor is large enough to be a cosmetic blemish. (2) The tumor or the lipoidal opacity adjacent to it is extending toward the central portion of the cornea, threatening to produce a disturbance of vision. (3) A sufficient number of hairs are present on the tumor surface to cause irritation. (At puberty the hairs are said to become coarser.) If strabismus is present, a simultaneous operation may be performed on the extraocular muscles.

Although an annular corneoscleral graft could be performed for a limbal dermoid, such a complicated operation is not necessary to give a satisfactory cosmetic result in most cases. The surface of the dermoid can simply be shaved off flush with the surface of the cornea and sclera. Though this does not remove all the tumor, it removes the hair-bearing portion. Complete surgical excision of the deeper part of the lesion is really not necessary as a dermoid is not a true neoplasm but rather normal tissue in an anomalous location. Following excision a limbal scar is left which is usually less noticeable than the elevated tumor (Fig. 2B). I have seen one case in which

an ectasia of the limbus developed as a result of attempting to excise the deeper portion of the tumor.

#### Dermoid Cysts and Teratomas of the Orbit

Dermoid cysts and teratomas occurring deep in the orbit are relatively rare. An intraorbital dermoid cyst may extend through defects in the orbital bones into the nasal cavity, the anterior and middle cranial fossae, or the temporal fossa. Such cysts sometimes have a dumbbell or hourglass shape." Teratomas have been reported to assume a variety of forms, but usually the tumor is irregularly round or oval. Teratomas cause unilateral proptosis at birth which tends to progress rapidly, while dermoid cysts do not usually become obvious until later. Malignant forms of both dermoid cysts and teratomas have been reported. Dermoid cysts sometimes cannot be differentiated clinically from other orbital tumors, although x-rays of the orbit may suggest the correct diagnosis.9

The treatment is, of course, surgical, the approach depending on the location of the tumor. The Krönlein operation through the lateral orbital wall was first used for an orbital dermoid cyst. The surgical removal of such a tumor may be difficult, and the approach to and dissection



FIGURE 2B

of the orbital tumor usually requires a high order of judgment. The assistance of a neurosurgeon or an otolaryngologist may be needed if the tumor has extended outside the orbit.

In 1959 I had the opportunity of seeing a patient with a teratoma of the orbit—a case which presented so many interesting features that it will be reported in some detail:

The patient was a four day old white female admitted to the University of Oregon Medical School Hospital on September 7, 1959, with a history of proptosis of the left eye since birth. She was born after a normal pregnancy and delivery. There was no family history of neurofibromatosis, café au lait spots, hemangiomas, or other tumors.

On general physical examination, the infant was well-developed and appeared normal in all respects except for proptosis of the left eye of about 10 mm. (Fig. 3). There were no cutaneous hemangiomas or café au lait spots. No abdominal masses were felt.

The left globe seemed to be displaced straight forward (not pushed to one side or the other), and its movements were limited in all directions. On closure of the lids, the cornea and sclera were completely covered. A mass could not be palpated in the orbit, and on compression of the globe, there was very little, if any, displacement backwards. The proptosis did not become very much greater when the infant cried. There was no pulsation of the eyeball, and no bruit was heard. When the patient was asleep, the pupils were small and approximately equal. When she was awake, the left pupil was larger than the right. It was very difficult to tell whether the pupils reacted to light, either directly or consensually.

On ophthalmoscopic examination the right eye appeared normal in every respect; the normal spontaneous pulsation of the central retinal vein was present. In the left eye the optic disc was moderately elevated and its margins were indistinct; there was no pulsation of the central retinal vein. Its retinal branches were very tortuous, but did not appear dilated.

X-ray examination of the skull revealed no defects in the calvarium. The optic foramina did not appear unusual and were equal in size. There was an area of calcification in the left orbit (Fig. 4). X-rays of the chest and abdomen were normal.

The urinalysis and complete blood count re-



FIGURE 3



FIGURE 4

vealed no abnormality.

The following diagnoses were considered: hemangioma or teratoma of the orbit; glioma of the optic nerve. The infant was observed for three weeks. During this time the amount of proptosis increased several millimeters, and the cornea was sometimes exposed during sleep.

On September 29, 1959, when the infant was 26 days old, an operation was performed under general anesthesia. A lateral canthotomy was made, and the incision was extended down to the lateral rim of the orbit and into the fornix to bare sclera. After the lateral rectus muscle was detached from the globe, it was possible to palpate the tumor, which almost completely filled the orbit posterior to the globe. By sharp and blunt dissection, the tumor was gradually exposed and was removed within its capsule, one very small rupture occurring without significant loss of material from within. The eyeball itself was of normal size; the optic nerve could not be identified at the site of its usual attachment to the globe or elsewhere in the orbit; it was apparently surrounded by and excised with the tumor mass. After removal of the tumor the lateral rectus muscle was reattached. Tenon's capsule and the conjunctiva were very carefully closed, and the lateral canthus was approximated.

On pathological examination of the tumor the specimen weighed 5 grams and measured 2.5x 2.3x2.0 cm. The external surface was pale gray



FIGURE 5

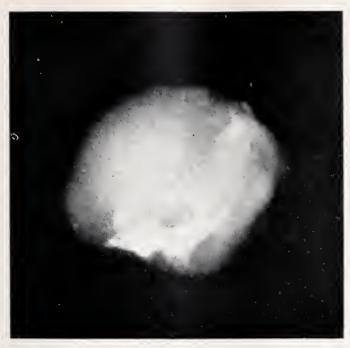


FIGURE 6

and slightly knobby (Fig. 5). An x-ray of the specimen is shown in Fig. 6. In order to preserve the shape of the mass, the outer surface was coated five times with melted paraffin, and the mass

was immersed in ice-water before it was bisected with a razor blade. The cut surface of the tumor revealed that about one-half of the mass was composed of a series of small cysts varying from 0.4 to 1.2 cm. in diameter with smooth linings and colorless watery contents (Fig. 7). One of the cysts showed a few hair shafts projecting into the lumen; another contained whitish cheesy material. A variable amount of cartilage and bone was encountered. Most of the solid parts of the tumor had a homogeneous fleshy white to moist pale gray appearance.

Microscopic examination (Fig. 8) revealed a well-encapsulated tumor composed of various tissue elements. In one area there was well-formed skin with hair follicles, sebaceous and sweat glands, and subcutaneous adipose tissue. In other areas the tissue resembled central nervous tissue. A number of cyst-like structures were seen, some lined with cuboidal epithelium, others with columnar epithelium which appeared to be mucus-secreting (goblet cells). In some areas irregular bundles of smooth muscle tissue sur-

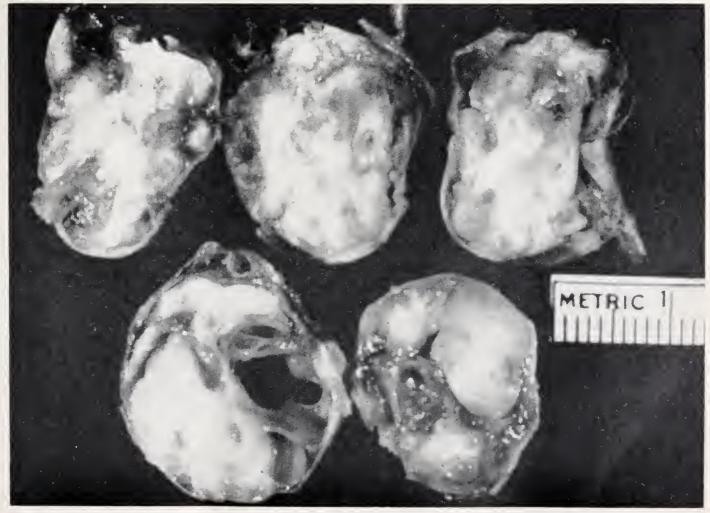


FIGURE 7

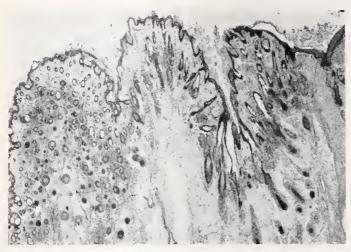


FIGURE 8A

rounded the epithelium, suggesting an attempt to form an intestinal structure. Other sections showed hyaline cartilage and intramembranous bone formation, areas of hematopoiesis being associated with the latter. All the structures were well-differentiated.

The pathological diagnosis was benign teratoma.

A structure corresponding to the optic nerve was not found on either gross or microscopic examination.

The post-operative course was uncomplicated.

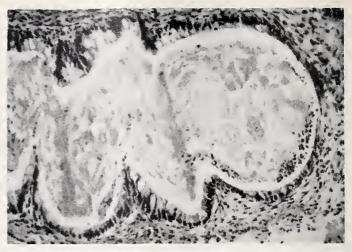


FIGURE 8B

The wound healed well; there was some enophthalmos, only a little limitation of lateral rotation, and almost normal levator function. The cosmetic result was excellent (Fig. 9).

There were immediate changes in the appearance of the fundus: the retinal arteries and veins were very attenuated but contained a thin column of blood. Macular edema was noted. Later there was a mottled appearance of the fundus due to pigment migration.

#### Summary

1. Dermoid cysts occur commonly in the lids



FIGURE 8C

or brows of infants and children, usually above and lateral to the eyeball. Complete surgical excision can usually be accomplished simply, if the surgeon does not attempt to dissect away too much of the fibrous tissue surrounding the cyst. An easily-removed continuous subepithelial catgut suture is recommended for closure of the skin.

2. Solid dermoid tumors occasionally occur at the limbus. Excision of the superficial portion

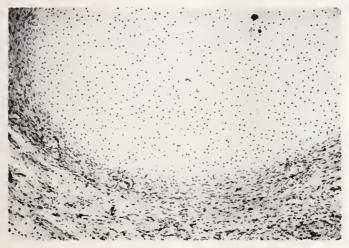


FIGURE 8D



FIGURE 8E



FIGURE 9

of these tumors may improve the appearance of the eye, as well as remove irritating hairs.

3. Dermoid cysts and teratomas rarely occur deep in the orbit. Teratomas cause proptosis at birth while dermoid cysts usually produce clinical symptoms later. The surgical excision of these tumors is frequently rather difficult.

#### Acknowledgments

I would like to thank Dr. K. C. Swan for his kind permission to report the case of orbital teratoma. Dr. Leonard Christensen presented this case at the 1960 meeting of the Ophthalmic Pathology Club in Washington, D.C.

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#### Legends for the Illustrations

- 1. Dermoid cyst in the outer portion of the eyebrow.
- 2. A. Limbal dermoid tumor
  - B. Small limbal scar 4 months after excision of lesion shown in A.
- 3. Three week old infant with orbital teratoma.
- 4. Note calcification in the left orbit.
- Note knobby surface of the teratoma.
- 6. This x-ray of the excised teratoma revealed "what appears to be osseous tissue within the lesion." The radiologist thought that he could see a trabecular patiern.
- The appearance of the cut surfaces of the teratoma.
- 8. Microscopic anatomy of the teratoma.
  - A. Epidermis, hair follicles, sebaceous glands and
  - B. Mucus-secreting epithelium
  - C. Nerve tissue surrounded by mesenchymal tissue D. Hyaline cartilage

  - E. Intramembranous bone formation.
- 9. Same patient as in Fig. 3 several months after removal of the teratoma.

#### **ERATUM:**

The department listed on the last Teaching Seminar was in error. This article was placed by the department of Internal Medicine.



#### ELECTROCARDIOGRAM

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#### WHAT IS YOUR INTERPRETATION?

TRACING NO. 203

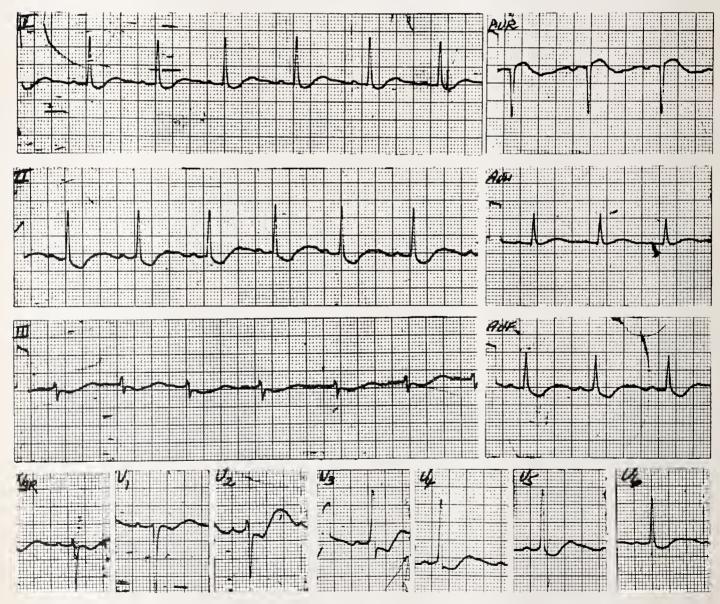
AGE: 22 SEX: F BUILD: SLENDER BLOOD PRESSURE: 114/68

MEDICATION: None

HISTORY: Protracted vomiting, dysuria, dizziness, weakness, fever, chilly

sensation.

#### Answer on page 85



The Department of Medicine, University of Arkansas Medical Center
\*James S. Taylor, M.D., Professor of Medicine

### WHAT IS YOUR DIAGNOSIS?

Prepared by the
Department of Radiology, University of Arkansas
School of Medicine, Little Rock

Answer on page 87



CASE NO. 10

#12-88-21 5 Month Old Colored Female History: The child had had nausea, vomiting and bloody stools intermittently for the past ten days.



#### PUBLIC HEALTH AT A GLANCE

## PERTUSSIS IMMUNE GLOBULIN, HUMAN (HYPERTUSSIS)

As a preventive public health measure, the Arkansas State Board of Health is making available, on a trial basis, pertussis immune globulin (Hypertussis) for use by physicians with unimmunized infants exposed to whooping cough. This is being done in an attempt to prevent not only mortality from pertussis in infancy, but even more the morbidity of brain damage that often results when such infants survive.

We do have records of mortality from pertussis by age, but no records are available of morbidity of brain damage due to pertussis.

Although reporting of whooping cough has dropped from 2,069 cases in 1920, when reporting began in Arkansas, to a low of 33 cases in 1961 (83 in 1962), there is still considerable under reporting of this disease. Accompanying tables show recorded morbidity and mortality in the Division of Communicable Disease Control, together with case fatality rates, from 1920 to 1962 inclusive, and pertussis deaths by age group for the years 1947-1962. It is noted that the deaths under 2 years of age constitute 84.2% of total deaths during the 16 year period, and that during the past 3 years (1960-1962) all deaths. or 100%, were in those under 2 years of age.

Pertussis immune globulin is recommended for intimately exposed infants who are not immunized against pertussis. There is some variability in recommended doses, but the Arkansas State Board of Health is recommending use as outlined by Cutter Laboratories, manufacturer of Hypertussis, in the 1963 Physician's Desk Reference:

Administration and Dosage (Hypertussis):

Prophylaxis: Usual dosage for infants is 1.25 cc given as soon after exposure as possible. Larger children, 2.5 cc. Some physicians use a second dose given 1 to 2 weeks after the first.

Therapy: Suggested dosage for average infant, 1.25 cc given intramuscularly only at 24 to 48 hours, depending upon condition.

Route of Administration: Intramuscularly only. Never administer intravenously.

Arkansas State Board of Health Procedures for

#### Distribution

Pertussis immune globulin is relatively expensive material, and certain procedures have to be established for administering its distribution. The following policies may be modified later if experience indicates needed modifications:

- 1. This material is to be administered by the physician requesting it. It is not to be given by public health nurses.
- 2. Only infants under 2 years of age are eligible to receive pertussis immune globulin from the Arkansas State Board of Health, and then only if:
  - a. They have not had a completed series of immunization against pertussis.
  - b. They have been exposed to a case in the family.
  - c. Their physician requested the material through the local health department and has reported the case to which this infant has been exposed.
- 3. No more than two 1.25 cc vials will be supplied for any individual infant.
- 4. To obtain this material the physician should contact the local health department, and in addition to reporting the case to which the infant was exposed he should give the name, address, birth date, and number of previous DTP injections for the exposed infant. Only after the above information has been received will the local health department relay the request for pertussis immune globulin.

If there is no local health department, the physician should contact the Division of Communicable Disease Control, Arkansas State Board of Health, Little Rock, giving the data requested in the preceding paragraph.

- 5. This material will be stocked only at the State Health Department in Little Rock and sent as soon as possible to the reporting physician.
- 6. During the trial period, no charge will be made for this material, which will be distributed

only under the above policies. Depending on experience, these may be modified later.

We hope this will be of help to the physicians of Arkansas in their efforts to prevent mortality and morbidity of brain damage from pertussis which is so dangerous for infants.

Ordinarily, pertussis morbidity is reportable by number of cases only, and that is still true except for cases in a family to which an exposed infant is to be given pertussis immune globulin.

#### Pertussis In Arkansas

			CASE				CASE
YEAR	CASES	DEATHS	FATALITY RATES	YEAR	CASES	DEATHS	FATALITY RATES
1920	2069	120	5.8	1943	1491	93	6.2
1921	904	98	10.8	1944	935	49	5.2
1922	371	52	14.0	1945	666	26	3.9
1923	1388	165	11.9	1946	490	21	4.3
1924	1786	171	9.6	1947	1689	55	3.3
1925	716	104	14.5	1948	1267	34	2.7
1926	1448	156	10.8	1949	769	13	1.7
1927	1739	182	10.5	1950	2011	37	1.8
1928	800	115	14.4	1951	1601	29	1.8
1929	806	162	20.1	1952	570	11	1.9
1930	798	97	12.2	1953	592	10	1.7
1931	561	68	12.1	1954	870	19	2.2
1932	591	97	16.4	1955	1680	13	0.8
1933	608	158	26.0	1956	1436	7	0.5
1934	918	166	18.1	1957	86	3	3.5
1935	934	92	9.9	1958	156	6	3.8
1936	247	21	8.5	1959	250	13	5.2
1937	913	122	13.4				
1938	1518	141	9.3	1960	54	5	9.3
1939	788	61	7.7	1961	33	3	9.1
1940	844	54	6.4	1962	83	3	3.6
1941	1166	68	5.8				
1942	829	44	5.3	TOTAL	39471	2963	7.5

#### Pertussis Deaths, Percentage By Age 1947-1962

YEAR	3 MO. & UNDER	4-6 MONTHS	7-11 MONTHS	1 YEAR	2 YEARS	3 YEARS	OVER 3 YEARS
1947	40.0	27.3	12.7	7.0	7.0	3.6	2.0
1948	61.8	17.6	11.8	5.9	***-	2.9	
1949	38.4	15.4	30.8	15.4			
1950	35.2	21.6	18.9	8.1	8.1	5.4	2.7
1951	13.8	20.7	24.1	20.7	3.5	6.9	10.3
1952	36.3	18.2	9.1	9.1	9.1	9.1	9.1
1953	10.0	40.0	20.0				30.0
1954	36.8	10.5	21.1	10.5		15.8	5.3
1955	38.4	7.7	23.1	15.4	7.7	7.7	
1956			14.3	28.6	14.3	14.3	28.6
1957	33.3	-			66.7		
1958	50.0	16.7	_	33.3	***		
1959	46.1	7.7	_	23.1	7.7		15.4
1960	100.0	_	_	No. on an			***
1961	33.3	33.3	-	33.3			
1962	_	33.3	66.7		44.		*=+=
1947-62	37.5	19.1	16.1	11.5	5.4	5.0	5.4



## The Successful Intern Recruitment Program of 1963-64

By Alfred Kahn, Jr., M.D.

The private hospitals of Arkansas that have an intern program have had a very gratifying response from the graduating class of the University of Arkansas Medical School. One hospital that wants a total of 12 interns has had 10 positions taken by University of Arkansas graduates; two to interns from other institutions, probably foreign graduates, may also be accepted by this hospital. Another large Little Rock hospital had positions for 13 interns, and has filled 11 positions from the University of Arkansas. Considering the failure of last years intern program in our private hospitals, this is an excellent showing.

There are a number of reasons for this improvement in intern acquisition by the private hospitals. Not in order of importance, but certainly of a prime factor, was the increased salary offered this year. The graduates of our medical school are well trained and deserve a living wage; admittedly, the newly graduated physician is not completely trained, yet he fulfills many important functions in the hospitals; to repay the intern by offering only education or education plus a too low salary was not equitable.

The private hospitals are offering improved training programs this year. More emphasis has been placed on a formalized program. This has more appeal to the intern although it does not necessarily insure a better education. The interns education in any good hospital is, to a large extent, the effort that he puts into trying to learn and acquire experience. Prior to the development of the new medical center, the private hospitals in Arkansas were an important factor in intern training and, in fact, trained many of the excellent practitioners in this state. In a large measure, these hospitals helped set a high standard of medical practice in Arkansas. This year they will again fully participate in the intern teaching program

and it ought to be mutually advantageous. Many physicians feel that more hospitals with good bed facilities and medical staffs with adequate time for teaching should seek approval for an intern program for general practice.

Among the other reasons why the intern program in Arkansas private hospitals is attractive is that the private hospitals have good equipment and practitioners; either one without the other nullifies any advantage. Most procedures, both diagnostic and therapeutic, can be performed in Arkansas' private hospital.

Perhaps, of paramount importance in the successful search for interns was the selling performed by the hospital administrations, and by the intern committees. A great effort in time and money was made to sell the University of Arkansas seniors on the good points of the private hospitals. Actually, if the Arkansas private hospitals do a good job of teaching interns and pay fair salaries, then the Arkansas private hospitals should receive a FAVORED, not equal, position in any activities, pertaining to "selling" the medical student interested in a general practice internship. It is the clear intent of the Arkansas Legislature that Arkansas should favor the training of physicians who will probably practice in Arkansas, otherwise, why the legislative directive requiring that Arkansas men and women be admitted preferentially to the University of Arkansas Medical School. It should be emphatically stated that the need is for selling, and from a favored position, if the Arkansas hospitals do a good job; there should be no coercing.

In the future, thought should be given to improving the internships beyond the current status. The wealth of clinical material in the private hospitals could be integrated into the University Hospital's teaching program; perhaps

the first year intern level is not the time to have an integrated program but second year interns or assistant residents might rotate through the different hospitals. Since many private practitioners are on the University of Arkansas teaching staff, the trainee would get adequate supervision by approved teachers.

Many of the problems in intern recruitment are similar to the problems in other states and reflect national trends as the large number of married medical students requiring larger incomes than previously, the increased number of hospitals seeking interns, the trend toward specialization, etc. Nevertheless, the private hospitals of Arkansas should not accept the statistically poor intern recruitment program of other areas as an excuse for failure in this state. A positive selling program beginning with the freshman Medical students should be instigated and actively promoted.



#### Hereditary Nonspherocytic Hemolytic Anemia: Type II Pyruvate Kinase Deficient Prototype

H. S. Bowman and F. Procopio, Ann Intern Med 58:567 (April) 1963

Nonspherocytic hemolytic anemia was investigated in 5 severely affected Amish children. The hemolytic syndrome appeared in the fourth generation of related families and was transmitted as a mendelian autosomal recessive trait. Siblings in whom the disease was previously unrecognized died in early infancy. The affected children exhibited pallor, icterus, and splenomegaly by 3 to 24 mo of age. Osseous thickening resulted in prominent frontal bosses. The erythrocytes were moderately macrocytic, slightly hypochromic with occasional elongated oval macrocytes; polychromia with absence of spherocytes was a common feature. There were substantial reticulocytosis, normo-erythroblastemia in the peripheral blood, and intense crythroid hyperplasia of bone marrow. Red cell destruction was presumably extra-vascular, as plasma hemoglobin values were normal and serum bilirubin was increased. No hereditary abnormality of hemoglobin was found. The erythrocyte osmotic fragility of fresh blood was normal. Immunohematological procedures excluded extracorpuscular immune mechanisms and the intrinsic red cell defect of paroxysmal nocturnal hemoglobinuria. Autohemolysis at 48 hr on blood from each anemic subject was increased and could be diminished only modestly by addition of glucose, but was decreased to normal amounts by provision of adenosine triphosphate, and was diagnostic of a type II variant. Erythrocyte glucose-6-phosphate dehydrogenase and glutathione constant after acetylphenylhydrazine administration was normal, but pyruvate kinase was profoundly deficient in erythrocytes of all homozygous affected children. Each

of their parents possessed intermediate levels of intra-erythrocyte pyruvate kinase, and were heterozygotes for this recessive gene. Splenectomy in these patients ended their transfusion requirement and permitted the cranial vertical striations and thickened frontal bones to regress. Hemolysis was incompletely arrested. In some type II variants, with pyruvate kinase deficiency, splenectomy results in palliation.

## Tuberculin Reaction Associated With Tuberculous Infection

K. H. K. Hsu, D. E. Jenkins, and L. R. Soriano, Amer Rev Resp Dis 87:493 (April) 1963

The new awareness of certain nontuberculosis mycobacteria causing a significant proportion of positive tuberculin reactions in man has posed a new problem in interpreting tuberculin reactions. This study is an attempt to distinguish infections of mammalian tubercle bacilli from those of nontuberculosis mycobacteria by multiple skin testing using purified protein derivatives antigens derived from the tubercle bacilli and the other mycobacteria of human origin. There types of population were tested. The tuberculous patients and the tuberculosis contacts showed a pattern of cutaneous reaction characterized by the large size of tuberculin reaction and the predominance of the tuberculin reaction over the reactions to the other mycobacterial antigens. Whereas among the elementary school children a different pattern was noted. These children represent a population group having little or no contact with tuberculosis. Tuberculin reactors were few, and most of the tuberculin reactions were small in size, and were associated with a stronger reaction to the other mycobacteria antigens. This was interpreted as a mycobacterial infection with cross reaction to the standard tuberculin.



#### Opposition Is Growing to the Medicare Principle

Opposition among the Nation's Independent Business Proprietors to the Principle of Medicare financed through social security is stiffening, according to the most recent poll of the membership of the National Federation of Independent Business. In balloting conducted in all 50 states in April, 83% of the small businessmen expressed opposition, and 15% favored the Anderson-King Bill now before congress, with 2% holding no opinion, according to C. Wilson, president of the Federation.

In a vote taken just one year earlier on the same issue, 77% of the nation's Independent Entrepreneurs were opposed, with 21% in favor, and 2% undecided. In August, 1961 the nationwide voting on the same issue showed only 73% opposed, 24% in favor, and 3% undecided.

"It is significant," Mr. Harder stated, "that opposition is growing to the Medicare principle." The Independent Business Proprietor's increasing opposition appears to be based on two major points. One is that it is feared this would start a trend toward Socialized Medicine. The other is that there is a growing belief that constant increases in paycheck deductions is a substantial factor in promoting labor trouble.

#### Special Day Honors Veteran DeWitt Doctor

DeWitt and South Arkansas County paid tribute to veteran physician Dr. R. H. Whitehead recently. The day was proclaimed "Dr. Whitehead Day" by the Mayor, and a program at Veterans Memorial Building focused on events of the doctor's 47 years of medical service. Dr. Joe Verser of Harrisburg, president of Arkansas Medical Society, was the main speaker.

A plaque was presented Dr. Whitehead in behalf of residents of the area "in appreciation of his many years of unselfish service."

#### Dr. Duzan Is Speaker at El Dorado Kiwanis Club

Dr. Kenneth Duzan, El Dorado pathologist

spoke at a meeting of the El Dorado Kiwanis Club. The meeting was held in the Rufus Garrett Hotel. He spoke on "The Hospital Insurance Act of 1963."

### Socialized Medicine Is Rotary Topic of Dr. Dale Alford

Dr. Dale Alford spoke to the Wynne Rotary Club on the proposed health program now pending before the national congress.

Dr. Alford, who served two terms in the House of Representatives, pointed out that the King-Anderson bill (commonly known as the "medicare" bill) would give the federal government virtually complete control over the medical profession.

## Outstanding Scholars Inducted Into the Alpha Omega Alpha Honor Medical Society

Eleven outstanding scholars of the University of Arkansas School of Medicine were inducted into the Alpha Omega Alpha Honor Medical Society May 20, 1963. Guest speaker for the occasion was Dr. Donald Wayne Seldin, professor and chairman of the Department of Medicine, University of Texas Southwestern Medical School, Dallas, Texas.

New AOA members, chosen by the medical faculty on the basis of scholastic excellence, include the following members of the senior class:

Jon C. Sewell, Springdale; Jesse O. Cavenar Jr., Batesville; Margaret A. Harrison, Mabelvale, and William Y. Springer, Lewis Ragon Willmuth, Jr., Michael Kelly and W. Jerry Carter, all of Little Rock.

New members from the junior class are: Elizabeth Sue Ross, Gurdon; James B. Weedman, El Dorado, and Henry M. Hawkins Jr. and L. Randle Coker, both of Little Rock.

Dr. Coy Fitch, associate professor of medicine and biochemistry, was installed as chapter secretary-treasurer. Dr. Louis Sanders, associate professor of medicine, is faculty advisor.

#### Tumor Clinic Staff Held Cancer Seminar

Tumor clinic staff members in Arkansas held a cancer seminar at the Hotel Marion preceding the opening of the Arkansas Medical Society meeting.

Guest speakers for the seminar were Dr. Francis Marion Woods, assistant professor of surgery at Tufts University in Boston, and Dr. Phillips J. J. Krupp, Jr., assistant professor of clinical obstetrics and gynecology at Tulane University in New Orleans.

Officers of the ATCSM are Dr. Charles W. Anderson of Pine Bluff, chairman; Dr. Joseph A. Buchman of Little Rock, vice chairman of the seminar; Dr. Rhys A. Williams of Harrison and Dr. Edward M. Cooper of Jonesboro, members of the executive council, and Mrs. William G. Utterback of Little Rock, executive secretary-treasurer.

#### Ophthalmology and Otolaryngology Section to Initiate Closed Circuit TV Session at SMA

The Section on Ophthalmology and Otolaryngology will initiate the closed circuit T.V. sessions this year with the first attempted color production of microscopic ear surgery on Monday morning, November 18, in the Municipal Auditorium's viewing room at New Orleans during the 57th Annual Meeting of the Southern Medical Association, November 18-21, 1963.

Dr. Harold Schuknecht of Harvard will be the moderator of the T. V. panel and will discuss advances in research as the guest lecture on Tuesday, November 19.

#### **AMA Names New General Counsel**

Robert B. Throckmorton of Des Moines, Iowa, today was named general counsel of the American Medical Association, effective July 1.

Dr. F. J. L. Blasingame, executive vice president of the AMA, said Throckmorton will succeed C. Joseph Stetler, who resigned to become executive vice president and general counsel of the Pharmaceutical Manufacturers Association in Washington, D. C., on July 1.

#### American College of Physicians Elects

One Arkansas physician has been honored by the American College of Physicians—an international organization representing specialists in internal medicine and related fields.

Dr. Wesley W. Spink, Minneapolis, Minn.,

President of the internists' group, said that Dr. William H. Perkins, of Little Rock was among those recently designated as Fellows and Associates of the American College of Physicians.

## Mr. Whaley Appointed Delegate to the 16th World Health Assembly in Switzerland

Mr. Storm Whaley, Vice President for Health Sciences of the University of Arkansas, will serve again this year as a delegate to the 16th World Health Assembly of the World Health Organization (WHO) in Geneva, Switzerland. He received his first assignment last year.

Whaley, officed at the University Medical Center in Little Rock, will be among a 13-member delegation from this country headed by Dr. Luther Terry, United States surgeon general. The sessions, legislative in nature, will extend from May 6 to May 24.

Associated with the University since 1954, Whaley has been assigned to the Medical center since early 1960. Prior to that, he served as director of information, as assistant to the President and as acting president, on the Fayetteville campus. He is president of the Pulaski County Health and Welfare Council.

#### Belgium Professor Speaks to U of A Medical Center Students

Dr. C. Heymans, professor of pharmacology of the University of Ghent, Belgium, addressed the student body of the University of Arkansas Medical on Tuesday, April 30th.

The Belgian scientist, who has received the Nobel Prize in medicine and physiology, discussed "Reflex Regulation of Blood Pressure and Hypertension" and "Action of Drugs and Respiration." Dr. Heymans is visiting the Medical Center at the invitation of the Pharmacology Department of the School of Medicine while on a lecture tour of universities throughout this country.

Dr. Heymans has received honorary degrees from 14 universities throughout the world.

#### THE MONTH IN WASHINGTON

Washington, D. C.—Congressional passage of the Administration's medical education bill appeared assured following a 288-122 vote of approval in the House. Backers of the bill predicted the Senate would pass it overwhelmingly.

The key vote in the House came on the disputed provision for a federally-administered loan

program for medical and other students. This was upheld by a 188 to 150 tally, paving the way for final House approval.

Although the Administration had sought a tenyear, \$755 million program of grants for the construction of medical schools and for loans, the House Commerce Committee reduced the program to three years and \$236 million in order to give Congress power to review progress periodically.

As approved by the House, the bill calls for a \$175 million program of matching grants for the construction, replacement and rehabilitation of schools for physicians, pharmacists, dentists, optometrists, nurses, and professional public health personnel. Also in the bill is a \$61 million loan program for medical, dental and osteopathic students.

Student nurses also might be eligible under a provision giving the HEW Secretary authority to extend the loans to other health professions if there is a shortage in a particular category.

The American Medical Association endorsed the construction feature of the bill and opposed the loan plan on grounds it "is not necessary since most of the demands are clearly being met by privately sponsored programs," including the AMA's own plan.

Under the construction part of the bill, medical and allied schools would get \$105 million in matching grants, dental schools would get \$35 million, and \$35 million would be for renovation of existing facilities in medical and allied schools.

The loan program provides individual loans not exceeding \$2,000 a year. Interest would be a minimum of three per cent or the going federal interest rate, whichever is higher. A "forgiveness" feature for part of the loan for duty in physician shortage areas or in the armed services was stricken from the bill on the House floor.

\* \* \* \* \*

The government's major medical research branch, the National Institutes of Health, had its budget trimmed slightly by the House, the first time in recent years NIH hasn't received a hefty boost over the Administration's request.

The House voted \$962.4 million for NIH, \$18 million less than called for in the budget, but still a record total and \$31 million above this fiscal year's sum.

The HEW Department as a whole received \$5,021,759,000 from the House, \$263 million

under the budget proposal and \$150 million less than appropriated last year. Much of this reduction, however, involved public assistance funds which would have to be restored if the money is needed.

The Public Health Service had its budget slashed \$51.8 million, receiving a total of \$1.5 billion.

Food and Drug Administration appropriations of \$40 million were \$9 million less than requested but \$11 million more than last year.

The Hill-Burton program of hospital construction aid received \$177.9 million, almost as much as the request, but \$48 million less than last year.

The House Appropriations Committee warned NIH in its report to "exercise a high degree of vigilance 'that its actions tightening supervision of research grants' not diminish the basic independence and integrity of our institutions of higher learning and the essential conditions of scientific freedom."

The committee said it has been concerned with reports that steps taken by NIH "seriously threaten the freedom of scientists and that they constitute evidence of federal control over science."

Meantime, a House Commerce subcommittee headed by Rep. Kenneth Roberts (D., Ala.) started hearings on charges NIH has been lax in management of research grants and funds. Another purpose of the hearing was to determine whether Congress should keep a closer check on NIH expenditures. U. S. Surgeon General Luther L. Terry told the subcommittee that most of the criticism of the government's medical research activities was unjustified. Dr. James Shannon, head of NIH, said 50 administrative steps have been taken in the past year to make sure NIH money is properly spent.

\* \* \* \* \*

Sen. George Smathers (D., Fla.) and Rep. Wilbur Mills (D., Ark.) introduced similar bills requiring states to provide medical care for the indigent equal to the protection given the elderly under the Kerr-Mills Act provision for the medically indigent.

"It seems poor policy to us to provide less in the way of medical care to persons on old-age assistance, who require help with their day-to-day living expenses," Smathers said, "than we provide to the recipients of medical assistance for the aged who have enough resources to meet their regular

expenses other than medical bills."

Rep. Mills is chairman of the House Ways and Means Committee. Sen. Smathers is a high-ranking member of the Senate Finance Committee and chairman of the Special Senate Committee on Aging. Their proposal was part of two programs carrying out President Kennedy's recommendations designed to help the elderly.

\* \* \* \* \*

The American Medical Association supported Administration proposals in the fields of maternal and child health.

In a letter to the House Ways and Means Committee AMA executive vice president F. J. L. Blasingame, M.D. said the intent of the legislation is in accord with the major objectives of the AMA's Committee on Maternal and Child Care. "These objectives simply stated are to reduce perinatal and maternal morbidity. The provisions of this act hopefully can make a contribution toward this end."

The legislation authorizes over a five-year period an increase to \$50 million from the present \$25 million level for grants to state for maternal and child health programs. A five-year, \$110 million program of matching grants to states for special projects for maternal and infant care including projects for the provision of health care to prospective needy mothers who have conditions associated with possible mental retardation of their children is included.

#### Further Experience with Colchicine in Treatment of Sarcoid Arthritis

H. Kaplan, New Eng J Med 268:761 (April 4) 1963

Three patients with sarcoid arthritis made a dramatic clinical recovery after treatment with colchicine. In 2, an acute bout of migratory polyarthritis of over 4 weeks' duration was terminated by a course of colchicine given to the point of gastrointestinal toxicity. In the third patient, a persistent polyarthritis of 4 years' duration rapidly subsided after institution of daily administration of colchicine. Colchicine has now proved effective in the treatment of 5 patients with sarcoid arthritis, and, in the absence of another consistently effective therapeutic agent, would seem to be the treatment of choice in this disease. It is suggested that many of the patients thought to have had "tuberculous rheumatism" actually had sarcoid arthritis.

## TENURE, PROMOTIONS, AND SABBATICAL LEAVE POLICIES OF U. S. MEDICAL SCHOOLS

Frequent requests have been received in the past for information pertaining to tenure, promotions, and sabbatical leave policies of U. S. medical schools. As comprehensive information on these subjects was decidedly limited both in the literature and in our own factual resource materials, a schedule pertaining to these items was incorporated in the AAMC-AMA Liaison Questionnaire for 1961-62. The results of the survey are reported in the following question and answer series:

#### **TENURE**

When and under what conditions are faculty members granted tenure?

In U. S. medical schools tenure is determined most frequently on the basis of (1) professorial rank or (2) on the dual basis of professorial rank and years of service. In the thirty medical schools where rank alone is the determinant for tenure, the lowest levels at which tenure becomes operative are distributed as follows: assistant professorial level in 7 schools; associate professorial level in 20 schools; and professorial level in 3 schools. In the 38 medical schools where a combination of professorial rank and years of service influence tenure, the lowest ranks offered tenure positions are distributed as follows: instructorships in 5 schools; assistant professorships in 19 schools; associate professorships in 13 schools: and professorships in 1 school. The minimum years of service required range from one to seven and apply equally in respective ranks to basic science and clinical science positions.

In seven schools tenure is a sole function of years of service. In two schools it is automatic upon appointment. Three medical schools have no tenure appointments, and five have indefinite tenure arrangements. Two schools did not supply any information on this subject.

Upon what factors other than rank or years of service is a tenure appointment contingent?

Twelve schools reported that their tenure appointments are based on a faculty consensus of demonstrated scholarly achievement with final approval resting in the office of the President and/or the Board of Trustees. In four schools tenure appointments stem from the Academic

<sup>\*</sup>Submitted by the Division of Operational Studies of AAMC

Council, Academic Senate or an All-University Committee. Two schools reported approval by the Dean or the Executive Faculty as contingent factors effecting tenure appointments.

Is the policy regarding tenure for "geographic full-time" faculty the same as for "strict full-time"?

Fifty-five schools replied in the affirmative; twelve in the negative and five did not respond to the question. The question was not applicable in 15 schools (including 2-year schools of basic science) which have no "geographic full-time" faculty members.

As a matter of policy, are full-time faculty members granted tenure if the major portion of their salary is paid from grant funds?

The source of salary funds, whether from grant funds or general university funds, has no effect on tenure policies in 51 medical schools. The reverse is true in 32 schools where tenure is not granted to full-time faculty paid mainly from research grants. However, 3 of these schools extend, for the duration of the grant, all the rights and privileges of tenured personnel to eligible faculty members compensated mainly from non-university funds.

Tenure policies for grant supported faculty members are currently under review in 3 institutions. There were 4 non-respondents.

#### **PROMOTIONS**

Do you have an established time limit that a man must remain in a given rank before he is eligible for promotion?

Fifty-nine schools reported no fixed limit on years of service in a given rank before becoming eligible for promotion. In twenty-two schools promotion is contingent on a fixed term of service in a given rank—three years of service in each rank being the interval most frequently reported as prerequisite to promotion. Six schools did not answer the question.

#### SABBATICAL LEAVE

Does your institution grant sabbatical leave? If so, what is the compensation plan?

Sabbatical leave is an established personnel policy in 57 medical schools. Among these schools, more than half of them (30) have compensation plans granting full pay for 6 months or half pay for one year. Eight schools offer 1 year's leave on part pay and 2 schools pay full salaries for an academic year. Compensation plans in the remaining 17 schools vary from those arranged on an individ-

ual basis to leave permissions without compensation.

Twenty-eight medical schools have no established plans for sabbatical leave. Two did not reply to the question.



The American Medical Association announces that it will publish an indexed catalog listing more than 4,000 medical motion pictures, covering every aspect of medicine and its allied arts. This catalog is expected to be released in late 1963.

Ralph R. Creer, director of medical motion pictures and television for the A.M.A., said the new catalog will list each film with a brief summary, running time, names of authors and producers, and address of the primary rental source. Evaluations will be included with many of these films.

#### AMA Occupational Health Congress to Be Held in San Francisco

"America's Best Resource—the Healthy Worker," will be the theme of the 23rd National Congress on Occupational Health, in San Francisco, September 25-26.

The two-day meeting at the Jack Tar Hotel is Sponsored by the American Medical Association's Council on Occupational Health. The conference theme will be developed by AMA president, Edward R. Annis, M.D., Miami, Fla., in opening session remarks. The theme will be further expanded through four symposia.

They are:

- -Occupational health problems faced by the family physician.
- -Educational resources for the practicing physician.
- -Restoration to gainful employment.
- -Relationship of personnel department to the medical department.

The presentation of the Annual Physician's Award of the President's Committee on Employ-

ment of the Handicapped will be made during the Congress.

The Department of Otolaryngology, University of Illinois College of Medicine, will conduct a postgraduate course in Laryngology and Bronchoesophagology from September 16 through 28, 1963, under the direction of Paul H. Holinger, M.D.

Registration will be limited to fifteen physicians who will receive instruction by means of animal demonstrations and practice in bronchoscopy and esophagoscopy, diagnostic and surgical clinics, as well as didactic lectures.

Interested registrants will please write directly to the Department of Otolaryngology, University of Illinois College of Medicine, 1853 West Polk St., Chicago 12, Illinois.

#### Tennessee Valley Medical Assembly Announced

The Tennessee Valley Medical Assembly will meet in the Read House, Chattanooga, Tennessee, September 30, and October 1, 1963.

Medical Society do pause with respect, and

WHEREAS, Dr. Hayes was for thirty-four years a member of our Society and his contribution to the health and well-being of many persons in this community will be long remembered and appreciated, and

WHEREAS, he was held in high esteem by his associates, his patients, and his community, THEREFORE

BE IT RESOLVED that a copy of this resolution be sent to his wife and that we shall cause a copy of this resolution to be published in the Journal of the Arkansas Medical Society,

BE IT FURTHER RESOLVED that a copy of this resolution be inserted into the permanent records of the Pulaski County Medical Society.

By Action of the Memorials Committee Pulaski County Medical Society

Read and approved May 7, 1963

John Greutter, M.D. Chairman



#### Dr. G. R. Siegel Succumbs

Dr. George Reginald Siegel, 61, prominent Clarksville physician died April 14th in a Clarksville hospital after a long illness.

Dr. Siegel, a native of Wichita, Kansas, had practiced medicine in Clarksville since 1927. He was president of the Johnson County Medical Society and former mayor of Clarksville. He was a member of the Holy Redeemer Catholic church.

#### ANSWER-Electrocardiogram of the Month

RATE: 72 RHYTHM: Sinus

PR: .19 sec. QRS: .09 sec. QT: -sec.

INTERPRETATION: Abnormal. Hypokalemia.

COMMENT: Tremendous U waves fused with the T, and the S-T changes indicate hypokalemia. The patient had pyelonephritis.



#### RESOLUTION

WHEREAS, in order to express themselves on the recent loss of Dr. J. Harry Hayes, the members of the Pulaski County



#### PERSONAL AND NEWS ITEMS

#### U of A School of Medicine Student Body President Announced

Louis R. Munos of Little Rock will serve as president of the student body of the University of Arkansas School of Medicine during the 1963-64 school year.

Munos, presently a junior, succeeds Neal Robinson of Rogers, Ark., as member of the June graduating class.

#### Little Rock Physician Heads RD Drive in Pulaski County

Dr. Grimsley Graham, has been appointed chairman of the educational campaign to alert people to symptoms of respiratory diseases in Little Rock. His appointment was made by the board of the Pulaski County TB Association.

#### B & PW Hear Dr. Baird Tell of Heart Disease

Dr. H. M. Baird, heart specialist, spoke at the Newport Business and Professional Women's club dinner recently. His topic was "Facts about Heart and Blood Vessel Diseases."

Dr. and Mrs. M. J. Kilbury, Sr., went to Baltimore where Dr. Kilbury attended a Seminar in Cytology (Papanicolaou) at Johns-Hopkins University recently. They then went to Florida for a vacation period at Reddington Beach, Florida.

#### **Doctors Set Up Memorial Fund**

The Johnson County Medical Society and Clarksville Hospital staff members have established a memorial fund in the name of Dr. G. R. Siegel.

In making the announcement, Dr. James Kolb, Sr. said it was their hope to turn over to the hospital enough money to furnish some new rooms for patients.

#### Dr. Clements Spoke at Tuckerman PTA

Dr. Sam D. Clements, director of the Child Guidance Clinic, of the University of Arkansas Medical School, Little Rock, spoke at the April meeting of the Tuckerman PTA. His subject was "Good Mental Health for School Children."

#### Dr. Hearnsberger Attends Meeting in Chicago

Dr. H. G. Hearnsberger, Stephens, Arkansas, attended a four day medical meeting in Chicago recently. More than 3,000 family doctors from the 50 states registered for the annual American Academy of General Practice meeting.

#### Lake City PTA Hears Doctor

Dr. Warren Douglas was featured speaker at the Lake City PTA recently. His topic was "Cancer".

#### Dr. H. B. White Is Coterie Speaker

Dr. H. B. White, Morrilton physician, was the guest speaker at the Literary Coterie meeting held in the home of Mrs. D. F. Newkirk. Mrs. Lloyd McConnell, program leader, introduced Dr. White who spoke on "The Heart and Blood Pressure."

#### Fayetteville Doctor Honored by Aid Fund

A memorial grant of \$6,500 dedicated to the memory of the late Fount Richardson, Fayette-ville physician and former president of the Arkansas Medical Society, has been made by the society's Medical Education Foundation.

#### **County Medical Assistants Society Elects Officers**

The Newly organized Arkansas County Medical Assistants Society met recently in the Farmers and Merchants Bank in Stuttgart.

Election of officers was held and those elected were Robbie Nichols, president; Clarice Beliew, president-elect; Pat Watkins, secretary; Deloras Wilson, treasurer; Rebecca Dyer, historian. Installation of these officers was held at a banquet in the Riceland Hotel.

## Contributors to the American Medical Association Education and Research Foundation

#### For the Month of March, 1963

Arkansas County Medical Auxiliary	\$100.00
Boone County Medical Auxiliary	5.00
Columbia County Medical Auxiliary	32.00
Franklin-Logan County Medical Auxiliary	31.00

Pope-Yell County Medical Auxiliary	12.00
Saline County Medical Auxiliary	
Sevier-Polk County Medical Auxiliary	
Sebastian County Medical Auxiliary	50.00
Southeast County Medical Auxiliary	15.00
Dr. J. R. Callaway, Clarksville	5.00
Dr. J. M. Kolb, Sr., Clarksville	5.00
Dr. H. W. Thomas, Dermott	5.00
Mrs. V. Saylors, Batesville	5.00
TOTAL	\$295.70



#### Medical Auxiliary Officers Announced

New officers of the State Medical Society Auxiliary are Mrs. James W. Branch, president-elect, and Mrs. Glen Keller, president. Mrs. Joe B. Scruggs, treasurer, and Mrs. J. R. Pierce, secretary.

#### Mrs. Keller Talks to Nurses

Mrs. Glen E. Keller, president of the Arkansas Medical Society Auxiliary, addressed the Jonesboro Licensed Practical Nurses Association at their April Meeting in the Library of St. Bernard's Hospital. Her topic was "Your Role in the Future of American Medicine."

#### Women's Auxiliary of the AMS Has Annual Convention in Little Rock

The 39th annual convention of the Woman's Auxiliary of the Arkansas Medical Society was held in Little Rock April 21 through April 23rd. Mrs. Amail Chudy served as general chairman with Mrs. F. R. Buchanan and Mrs. Elvin Shuffield assisting.

A reception for board members was given in the home of Mrs. Frank Padberg, president, with the president-elect, Mrs. Glen Keller assisting.

Mrs. Guy Farris and Mrs. Harlan Hill were hostesses at a pre-convention board meeting and breakfast in the Mirror Room of the Albert Pike.

There was a luncheon in the New Room honoring the president of the Southern Medical Auxiliary, Mrs. Elias Margo. T. C. Peterson of the American Farm Bureau Federation spoke and Feinstein's offered a summer fashion show. Mrs. Robert Jones was chairman.

Mrs. William Snodgrass was chairman of the

Past President's Breakfast in the Mirror Room of the Albert Pike, followed by the second general session.

Mrs. William G. Thuss of Birmingham, Alabama, president of the Woman's Auxiliary of the American Medical Society was guest of honor and featured speaker at a luncheon at the Country Club of Little Rock, Mrs. Grimsley Graham, chairman.

#### LETTERS



May 3, 1963

Dr. Alfred Kahn Editor Arkansas Medical Journal 1300 West Sixth Street Little Rock, Arkansas Dear Dr. Kahn:

TO

Yesterday I had occasion to testify before a referee of the Arkansas Workmen's Compensation Commission. The primary question—as it often is—was did the claimant who had been attended by a physician of the insurance company's choice have a right to compensation bene-

#### ANSWER-WHAT IS YOUR DIAGNOSIS?

Diagnosis: Intussusception of the colon.

X-Ray Features: The intussusception was encountered in the rectum and easily reduced to the right colon by the pressure of the barium. The end of the column assumes a cup-shaped form as it surrounds the intussusception. Thin ringlike shadows of barium mark the limit of the column, representing material caught in the haustral crevices as they surround the mass of intussuscepted bowel.

fits under the Law for treatment subsequently administered by the physician of his own choice? The medical record will, I believe, to the satisfaction of most physicians, substantiate the assertion that the patient was much improved by the medical management administered by the physician of the patient's own choice. However, this was not the primary question. In fact, this seemed of little or no interest to the carrier! The occasion for this letter is:

The attorney for the insurance company, in asserting the absence of a legal right of choice of treating physician by the injured workman, made the statement that the insurance company DID NOT deny the right of choice of treating physician to ANY individual, but in the case of workmen covered under his client's policies they considered it their obligation to select the treating physician and to pass on the medical management of the case! As I listened to this revealing statement, I reflected on why Health and Accident underwriters had not demanded the same privilege, especially in those instances where one carrier writes a blanket policy for a particular industry. In each instance, the patient has had the choice of accepting or rejecting employment with an organization and thereby has also had the choice of accepting or rejecting Health and Accident coverage by the carrier selected by his employer. The situations are similar, but, in the case of the workman whose injury comes under the Workmen's Compensation Act of Arkansas, the authority of the Workmen's Compensation Commission (illegally, in the opinion of some) has been used to enforce the demands of the insurance carrier. It has been accepted that the vested financial interest of the carrier supersedes the vested health interest of the patient and the vested interest of the physicians of Arkansas to carry on an unencumbered private practice. This conclusion is unavoidable unless one assumes insurance adjustors are more conscientious and more capable of managing the practice of medicine than free physicians!

The only significant difference in these two situations is the availability of the coercive force of government as applied through the arbitrary directives of the Workmen's Compensation Commission (Rule 21). Arkansas law says only: "The employer shall promptly provide . . . ." There is nothing to imply that our legislature intended to add additional controls over the practice of

medicine. As in all monopolies (and Rule 21 literally gives the Workmen Compensation carriers an absolute medical monopoly over those injured workmen of Arkansas who are covered by the compensation law), the monopoly of control of the practice of compensation medicine and the right of choice of treating physician of most working men of Arkansas can only be promulgated by the coercive power of government. In this instance, it is the State; a privilege not enjoyed by Health Insurance underwriters.

It would seem that those of us who regard the proper function of government to be to inhibit the destructive activities of man and not the control of man's creative activities (such as the practice of medicine) are left no choice but to continue in active and outspoken opposition. Frederic Bastiat, a nineteenth century Frenchman who understood freedom so well, explaining himself to those critical of his position, expressed sentiments we share: "I have not made an alliance with anyone: I have not joined either side. On each question, I have voted according to my own conscience. . . . one must base his vote on For What instead of With Whom."

Can any lesser sentiment sustain the private practice of medicine and freedom for our children?

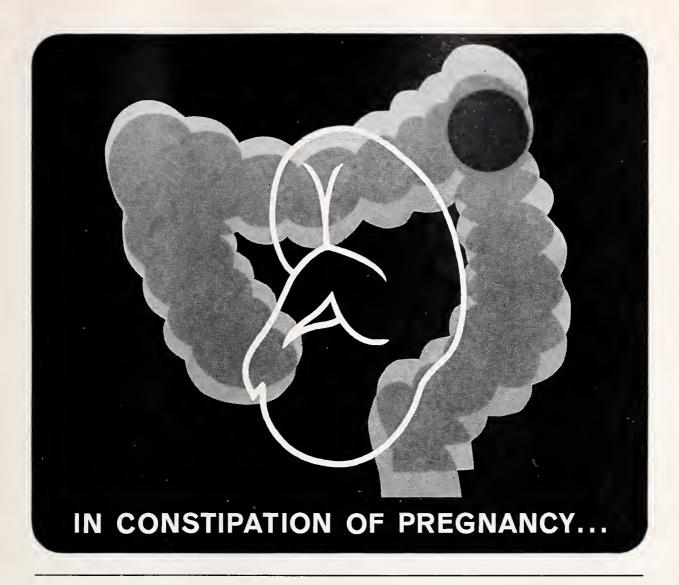
Sincerely yours, Kenneth G. Jones, M.D.



#### **BOOK REVIEWS**

CLINICAL DISTURBANCES OF RENAL FUNCTION by Abraham G. White, M.D., F.A.C.P., Associate Visiting Physician and Chief of the Renal Disease Clinic, Queens Hospital Center, Jamaica, N. Y., pp. 168, illustrated, published by W. B. Saunders Company, Philadelphia and London, 1961.

This book on renal disease is extremely interesting to any medical practitioner. For example, there is a chapter on surgical aspects of renal dysfunction. There is a chapter on obstetric renal dysfunction. There is a good discussion on acute renal failure, a catastrophy which might befall a patient in any specialty. The various types of nephritidies are discussed. An attempt is made to correlate pathogenesis and renal physiology with the disease processes. This book is heartily recommended.



#### **BULK IS BASIC**

#### METAMUCIL® IS BASIC ....

(brand of psyllium hydrophilic mucilloid)

Metamucil corrects constipation in pregnant patients without disturbing either the rhythmic or digestive functions of the gastrointestinal tract.

By adding a soft, hydrophilic, easily-compressed bulk to the diet, Metamucil augments and reinforces the natural bulk stimulus to intestinal peristalsis and the defecation reflex. This purely local action softens hard fecal masses, increases muscle tone and helps reestablish the normal rhythm of elimination.

Since its action is not systemic and not

habit forming, Metamucil may be safely administered throughout pregnancy.

Average Adult Dose: One rounded teaspoonful of Metamucil powder (or one packet of Instant Mix Metamucil) in a glass of cool liquid.

Metamucil is available as Metamucil powder in 4-,8- and 16-ounce containers and as flavored Instant Mix Metamucil in cartons containing 16 and 30 single-dose packets.

G. D. SEARLE & CO., Chicago 80, Illinois Research in the Service of Medicine

A Manual of CUTANEOUS MEDICINE by Donald M. Pillsbury, M.A., D.Sc. (Hon.), M.D., F.A.C.P., Professor and Chairman of Department of Dermatology, University of Pennsylvania School of Medicine; Director, Commission on Cutaneous Diseases, Armed Forces Epidemiological Board; President, XII International Congress of Dermatology, Walter B. Shelley, M.D., Ph.D., F.A.C.P., Professor of Dermatology, University of Pennsylvania School of Medicine; National Consultant in Dermatology to the Surgeons General, U.S. Army and U.S. Air Force, and Albert M. Kligman, M.D., Ph.D., Professor of Dermatology, University of Pennsylvania School of Medicine; Professor of Dermatology, University of Pennsylvania Graduate School of Medicine pp. 430, illustrated, published by W. B. Saunders Company, Philadelphia and London, 1961.

This is a well written book on dermatology. There is very little attempt within this book to correlate skin lesions with general disease and with skin pathology and skin physiology. The book has a moderate number of illustrations. There is an adequate discussion of therapy. This text is less complete than many others in the field and as such suffers in comparison. It is, however, well written and well organized.

KEY AND CONWELL'S MANAGEMENT OF FRAC-TURES, DISLOCATIONS, AND SPRAINS, edited by H. Earle Conwell, M.D., F.A.C.S., Associate Professor of Orthopedic Surgery, University of Alabama School of Medicine, Birmingham, Ala.; Attending Orthopedic Surgeon, University Hospital, St. Vincent's Hospital, Children's Hospital, Baptist Hospitals, East End Hospital, and South Highlands Infirmary, Birmingham, Ala.; Consulting Orthopedic Surgeon, Veterans Hospitals, Tuscaloosa, Ala., and Montgomery, Ala.; Member, Trauma Committee, American College of Surgeons; Member, Fracture Committee, American Academy of Orthopaedic Surgeons; Member, Orthopedic Advisory Board, Alabama State Crippled Children's Service; Chief, Conwell Orthopedic Clinic, Birmingham, Ala. and Fred C. Reynolds, M.D., Professor of Orthopedic Surgery, Washington University School of Medicine, St. Louis, Mo., Seventh Edition, illustrated, pp. 1129, published by The C. I'. Mosby Company, St. Louis, 1961.

This Seventh Edition of Key and Conwell's MANAGE-MENT OF FRACTURES, DISLOCATIONS, AND SPRAINS is an outstanding volume. It is edited by Conwell and Reynolds; Dr. Key is deceased. The book is probably the most authoritative textbook on this subject. It is of special interest to Arkansans in that Dr. Arthur H. Stein, Jr. presented some of the material published in this book at an Arkansas medical meeting. His paper was an outstanding one. The book is profusely illustrated and is well indexed. It does not have references after each chapter and, in fact, they are the exception rather than the rule, which might be considered the one weakness of this particular text. This book is heartily recommended to all medical students, interns and orthopedics.

HANDBOOK OF PEDIATRICS by Henry K. Silver, M.D., Professor of Pediatrics, University of Colorado School of Medicine, Denver, Colorado, C. Henry Kempe, M.D., Professor of Pediatrics and Head, Department of Pediatrics, University of Colorado School of Medicine, Denver, Colorado, and Henry B. Bruyn, M.D., Associate Professor of Pediatrics and Medicine, University of California School of Medicine, San Francisco, California, Assistant Clinical Professor of Pediatrics, Stanford University School of Medicine, Stanford, California, Di-

rector of Student Health, University of California, Berkeley, California, Fourth Edition, pp. 574, published by Lange Medical Publications, Los Altos, California, 1961.

This small text contains precisely what the title states. It is a handbook to be carried in the pocket and which outlines diseases and treatment in the briefest possible form. It is well organized and authoritative. It is relatively inexpensive. This book is a good supplement for teaching rounds. AK

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# Hypercoagulability Associated with Malignant Disease and With the Postoperative State: Evidence for Elevated Levels of Antihemophilic Globulin

M. A. Amundsen, J. A. Spittell, Jr., J. H. Thompson, Jr., and C. A. Owen, Jr., *Ann Intern Med* 58:608 (April) 1963

Twenty-five patients with normal thromboplastin generation were studied after a variety of surgical procedures. In every case, accelerated thromboplastin generation occurred by the sixth postoperative day. Thromboplastin generation was evaluated in a group of 30 patients with malignant neoplasms which included tumors of the breast, lung, and abdominal viscera. Accelerated clotting was present in all but 3 of 24 patients with invasive or metastatic lesions, while only 1 of 6 with small local growths showed this phenomenon. In both groups of patients, the accelerating activity was present in plasma adsorbed with barium sulfate and aluminum hydroxide but was absent from serum. The activity was destroyed by heating for 5 min at 56 C and was precipitated at 25% saturation with ammonium sulfate. All of these characteristics are similar to those of antihemophilic globulin (AHG). Therefore, plasma demonstrating accelerated thromboplastin generation was tested for its ability to shorten the prolonged recalcification time of plasma from patients with congenital AHG deficiency (classical hemophilia) and was found to have greater than normal amounts of AHG-like activity.

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#### THE GANGRENOUS BITE OF THE BROWN RECLUSE SPIDER IN ARKANSAS\*

Calvin J. Dillaha, M.D., G. Thomas Jansen, M.D., W. Mage Honeycutt, M.D. and Carson R. Hayden, M.D.

Eight years ago Drs. Lessenden and Zimmer in Kansas<sup>1</sup>, Atkins, Wingo and Sodeman in Missouri<sup>2</sup>, and our group in Arkansas began seeing in ever increasing numbers the bite of a spider potentially more dangerous than the Black Widow. It is named Loxosceles reclusus but is commonly known as the Brown Recluse, the brown spider, or the brown house spider. We deem it potentially more dangerous than Lactrodectus mactans because its natural habitat is indoors and its appearance is insignificant to the point of innocence. This shy recluse can inflict serious damage to the skin at the site of the bite and can produce a severe, sometimes fatal systemic reaction. There are, to our knowledge, two examples of the fatal reaction in the medical literature<sup>1</sup>,<sup>3</sup>. Volume for volume, its venom is more potent than that of a rattlesnake. Its innocent appearance and the fact that the serious effects of the venom are usually not apparent until several hours after the bite make it obvious that we who live in this area must acquaint ourselves with the clinical picture of the bite of this spider, for prompt treatment can abort much of the reaction.

The Brown Recluse is slightly smaller than the Black Widow and has an oval body with four long legs on each side of the thorax. (Fig. 1) It varies from light fawn to dark chocolate brown in color and its body is covered with short hairs invisible to the naked eye. The dark violin-shaped band over the cephalo-thorax is the one distinguishing mark that differentiates this from other brown

house spider. Note violin shaped band on dorsum of cephalo-thorax.

spiders. (Fig. 2) While this spider is found in open fields and the rocky bluffs in Arkansas<sup>4</sup>, it thrives particularly well in dark corners and crevices, in closets and storerooms and other areas in man made buildings. This spider does not attack, but bites when molested. Often victims are bitten when putting on clothing in which the spider has become trapped. Their nocturnal and retiring habits account for the fairly low bite incidence in spite of the large spider population.

Although bite reactions were seen earlier, it was not until 1957 that Drs. Atkins, Wingo and Sodeman<sup>5</sup> at the University of Missouri first identified the Loxosceles reclusus as the cause

Fig. 1. Loxosceles reclusus, the Brown Recluse, the brown

<sup>\*</sup>From the Division of Dermatology, Department of Medicine, University of Arkansas Medical Center and the Little Rock Veterans Administration Hospital, Little Rock, Arkansas.



Fig. 2. Loxosceles reclusus. Close-up of body showing characteristic violin shaped band on cephalo-thorax.

of the envenomation. Since that time necrotic bite reactions have been reported from Kansas south to the Gulf Coast and from Tennessee west to Oklahoma. It is not unlikely that the spider and/or travellers and vacationers with a bite will soon appear in other areas of the country.

Loxosceles reclusus has a larger and longerlegged South American brother, Loxosceles laeta, the bite of which produces a cutaneous lesion identical to that caused by the reclusus. Our South American colleagues<sup>5</sup>, 6 labeled this reaction loxoscelism, cutaneous and systemic, a designation we feel to be more specific than either necrotic arachnoidism or gangrenous bite of the brown spider. It is interesting to note that the laeta bite was first reported in 1877, 80 years before the original report on reclusus. The laeta is considered the most common house spider in many coastal areas of South America<sup>8</sup>, where it has been studied extensively.

The bite of the Brown Recluse typically presents the following picture: There may be mild transitory stinging at the time of the bite, but there is little associated early pain. The patient may be completely unware he has been bitten and

the spider is seldom seen. Only after two to eight hours does pain, varying from mild to severe,

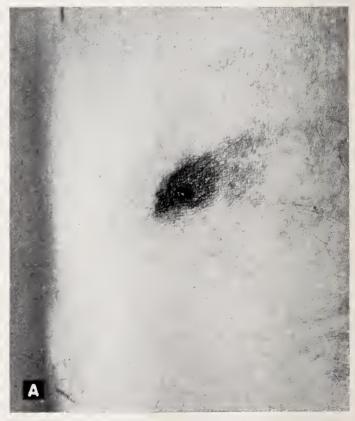


Fig. 3. A. Early bite reaction with hemorrhagic puncta and surrounding ecchymosis and ischemia.

begin. At the site of the puncture, the first reaction of note is transient erythema, followed by a bleb or blister with an irregular area of ischemia. (Fig. 3A) A zone of hemorrhage with induration, and a surrounding halo of erythema, develops peripherally. (Fig. 3B, 4) The central ischemia may become stellate and the area, during the course of several days, turns dark in color and firm



Fig. 3. B. 4 days after bite, irregular zone of hemorrhage and induration is seen.

to touch. Within seven days, the central area is depressed, sharply demarcated, dark and mummified. (Fig. 3C) Early separation of the margins may be seen and an open ulcer forms after the eschar is lost. The venom appears to contain a spreading factor, resulting in a bizarre gravitational spread of the necrosis. This may be demonstrated easily in the animal. The ulcer may be from one to many centimeters in diameter, with the healing time directly proportional to the size. In some instances the ulcer may be so large that skin grafting is required, but the graft may take poorly or not at all.

Before we learned to recognize the brown spider bite, our diagnoses included cellulitis, ecthyma and vascular occlusion. Our first patient told us she had received a mild stinging bite when she put her hand under the table, but we refused to believe that such necrosis could result from a bite



Fig. 3. C. 7 days after bite the lesion is depressed sharply demarcated, dark and mummified (gangrenous).

and made a diagnosis of vascular occlusion, etiology undetermined.

The bite may also evoke a serious systemic response, including fever, chills, malaise, weakness, nausea, vomiting and joint pain, as well as a generalized pruritic morbilliform and petechial eruption, all occurring within 24 to 48 hours after envenomation. In one instance, we considered the generalized eruption a drug reaction until the



Fig. 4. Early bite reaction with central bleb, surrounded by stellate area of hemorrhage and a large halo of erythema.

local site of the bite had developed its characteristic appearance. The systemic response occurred in only four of our patients, although 15 of 21 patients reported in the literature to date had it. Laboratory data may reveal hemolytic anemia. hemoglobinuria, hemoglobinemia, leukocytosis, proteinuria and thrombocytopenia. Hemolysis and thrombocytopenia and the consequences thereof are the principal alterations that appear to account for the fatalities, so far all in young children. One of our patients, a seven year old Negro child, developed a severe hemolytic process for which he received corticosteroids that were probably lifesaving. The hemolytic response remained unexplained until days later when the lesion on his back was discovered and identified as a gangrenous bite. The systemic response to the venom in the dog has been dramatically demonstrated in our laboratory,9 showing the rapid hemolysis and rise in the serum hemoglobin and a corresponding fall in the platelet count. These effects are most pronounced at the end of approximately 24 hours, with complete recovery at the end of 72 hours.

Although several medications have been advocated for therapy, our preference is the prompt administration of corticosteroids. Of sixteen patients with brown spider bite seen to date, six did not receive steroids and developed local gangrene. Ten were treated with varying amounts of steroids at different intervals after recognition of the bite; five developed local necrosis and five did not. The failure in five, we believe, is explained easily by the lack of early and adequate treatment with corticosteroids. Nominal amounts of systemic corticosteroids appear to have little effect on the local necrosis. However, larger doses given early may completely abort the gangrenous response as well as the systemic reaction. The dosage schedule which we have found most effective is: 80 mg of methyl prednisolone (Depo-Medrol intramuscularly, immediately; followed by one or two additional doses of same amount at 24-48 hour intervals. Subsequently, step wise decrease to 40, 20, 10 mg every 24-48 hours,

depending on the patients response, is carried out. The effectiveness of this therapy for the systemic response can be verified in the experimental animal.<sup>10</sup> In a series of ten rabbits challenged with an equal amount of pooled venom, intravenous methyl prednisolone was seen to protect all three rabbits receiving this steroid six hours following the venom injection. Five of six animals receiving the steroid 24 to 48 hours after the challenge died within three days, as did the single untreated control.

We have briefly outlined the clinical picture and our recommendations for therapy in cases of cutaneous and systemic loxoscelism caused by the bite of the Brown Recluse spider. We feel that the next ten years will probably see both an increase in the number of cases and in the geographical area involved. Successful treatment and the prevention of necrosis depend on the ability of the physician to recognize the clinical picture when the patient is first seen.

Mr. Douglas Cowsert gave technical assistance and Mrs. Barbara Corn assisted with preparation of the manuscript.

Division of Dermatology, University of Arkansas Medical Center, Little Rock, Arkansas.

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# DIAGNOSIS AND MANAGEMENT OF ISCHEMIC CEREBRAL VASCULAR DISEASE: A REVIEW\*

Jack P. Whisnant, M.D., Robert G. Siekert, M.D., Clark H. Millikan, M.D.

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ASCHEMIC CEREBRAL VASCULAR disease, that is, cerebral infarction and its precursor states, accounts for about 80 per cent of the cerebral vascular diseases. We have found it helpful to divide focal cerebral ischemia into three categories depending on the temporal profile of the disease process. Each category or stage depends on the clinical condition of the patient at the time of examination. The three clinical stages are as follows: Stage 1, the incipient stroke, is characterized by brief episodes of focal neurologic symptoms usually lasting from 5 to 30 minutes and recurring for several weeks or months with normalcy between attacks. Stage 2, the progressing (or advancing) stroke, is characterized by focal neurologic symptoms and signs that gradually increase in severity during the period of observation. Stage 3, the completed stroke, is charac-

\*Read at the Veterans Administration 14th Annual Institute of Psychiatry and Neurology, North Little Rock, Arkansas, March 8 and 9, 1962. terized by focal neurologic symptoms and signs that have ceased progressing. Although the neurologic signs may persist, some degree of spontaneous improvement usually can be expected during subsequent days or weeks.<sup>1</sup>

These three stages of the ischemic process are represented graphically in the figure. Since these categories represent an arbitrary division of a process that sometimes continues, overlapping can be expected. A particular patient's condition may be in one category at one time and soon thereafter be in another category. For example, a completed stroke may be preceded by the transient episodes of the incipient stroke, by the gradually progressing symptoms of the advancing stroke, or by both of these. On the other hand, a completed stroke may occur abruptly with the maximal degree of neurologic deficit occurring in a period of a few seconds or minutes. This is characteristic of embolic cerebral infarction.

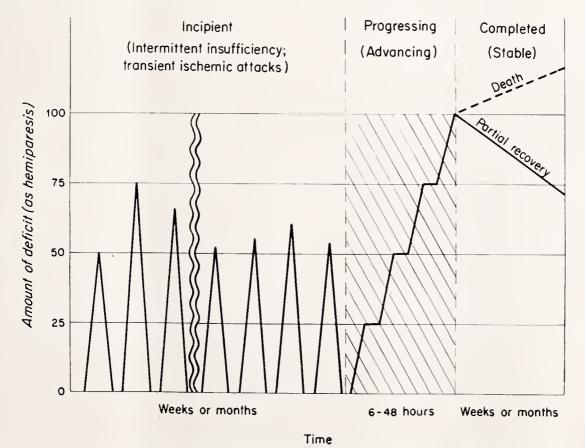


Figure. Diagrammatic representation of the temporal profile of ischemic cerebrovascular disease.

Each of these clinical categories may occur in either the carotid or the vertebral-basilar arterial system. The nature of the symptoms depends on the arterial system involved. An incipient stroke in the carotid system is sometimes called "intermittent insufficiency of the carotid arterial system." This syndrome is characterized by transient episodes of weakness or numbness of one side of the body, aphasia if the dominant hemisphere is involved, and impaired vision in the eye on the side of the arterial lesion. Visual symptoms may not occur simultaneously with symptoms in the extremities. Decreased or absent carotid pulsation may be detected on physical examination. However, this is usually not a reliable sign unless a marked difference in the pulsation is apparent. An ophthalmodynamometric reading of decreased retinal arterial pressure2 is reliable evidence of carotid arterial occlusion or stenosis. Localized bruits over the carotid bifurcation in the neck or over the globe of one eye are often objective evidence of occlusive disease in the carotid arterial system.

Incipient stroke in the vertebral-basilar arterial system is characterized by transient episodes of weakness or numbness on one side of the body, sometimes shifting in different attacks from one side of the body to the other. Associated with this there may be either homonymous hemianopsia or bilateral homonymous hemianopsia, resulting in transient blindness, as a result of ischemia in one or both occipital lobes. Various combinations of diplopia, vertigo, dysarthria, dysphagia, or clouding of consciousness may occur as manifestations of brain-stem ischemia. Ataxia may occur as a sign of cerebellar ischemia. There are no reliable physical signs to aid in diagnosis of incipient stroke in the vertebral-basilar system. Occasionally, localized bruits may be detected over either subclavian artery in the supraclavicular fossa, but such bruits are not as reliable evidence of occlusive disease as are the bruits over the carotid bifurcation or the globe of the eye.

Symptoms similar to those of transient ischemia in the carotid or the vertebral-basilar system may occur in the progressing or in the completed strokes in those systems. However in these instances the stage of ischemia is identified by the progressive nature of the symptoms or by evidence that infarction has occurred and has stabilized.

These categories of cerebral ischemia are clinical diagnoses and not arteriographic diagnoses.

Although there is a small margin of error in clinical diagnoses, the error in the diagnoses made has been less than 4 per cent by experienced clinicians as determined by the subsequent course of such patients. In any of the clinical categories described, an arteriogram may show occlusion of the appropriate artery, stenosis of an artery, or no evidence of significant disease in any of the arteries depicted. Arteriograms should be interpreted carefully and the physician must be certain that the patient's symptoms can be reasonably explained on the basis of the arteriographic lesion demonstrated before he assumes that there is a relationship between an anatomic lesion and physical signs and symptoms.

The need for such care has been demonstrated by a routine necropsy study of persons more than 50 years old. Forty per cent of such persons, regardless of the cause of death, had occlusion or greater than 50 per cent stenosis of one or more of their cervical arteries (the arteries from the arch of the aorta to the base of the skull).<sup>3</sup> Stenosis and occlusion of arteries in this group were more common in those who had a history of cerebral ischemia, but 30 per cent of those who had no history of cerebral ischemia had one or more of such arteries either completely occluded or more than 50 per cent stenosed.<sup>4</sup>

The proportion of patients who are demonstrated by arteriography to have extracranial or intracranial arterial occlusive disease is dependent on the nature of selection of patients for the arteriographic study. In our own experience with arteriograms of patients with incipient stroke, we have found that approximately 57 per cent have extracranial occlusive arterial disease, 13 per cent have intracranial occlusive disease, 5 per cent have both intracranial and extracranial arterial disease, and 25 per cent show no evidence of an arterial lesion which can account for the patient's ischemic symptoms. Because, for the most part, the arteriograms were employed to determine whether a lesion could be found which might be corrected surgically, there is some bias in the group in favor of extracranial disease. We have not performed arteriograms routinely in patients with ischemic cerebral vascular disease. In general, after a clinical diagnosis of ischemic cerebral vascular disease, arteriography is considered when it has been determined that the patient is an acceptable candidate for a surgical procedure, if an accessible lesion should be demonstrated.

#### **Treatment**

Until recent years, the emphasis in the treatment of strokes has been on the care of the complications which frequently appeared and on the physical rehabilitation necessitated by the residual of the cerebral infarct. In the last decade the therapeutic horizon has been broadened to include the concepts of (1) prevention of cerebral infarction, (2) prevention of further progression of an ischemic process, and (3) prevention of recurrence of cerebral infarction. Anticoagulant therapy, surgical correction of arterial lesions, and thrombolytic therapy have all received investigative attention recently in the treatment and prevention of cerebral ischemia.

Anticoagulant Therapy.—Long-term anticoagulant therapy is recommended for patients with ischemic cerebral vascular disease of the following types: (1) incipient stroke, (2) progressing stroke, and (3) cerebral embolism occurring from a clinically recognized source, when further emboli might be expected. Patients with completed infarction may require anticoagulant therapy if additional symptoms occur which are characteristic of a new incipient stroke or of a newly progressing stroke.

When patients with incipient stroke in either the carotid or vertebral-basilar arterial system are treated with anticoagulants, more than 90 per cent stop having transient ischemic attacks.5 When such patients have been followed up for as long as 5 years, only 4 per cent have had serious cerebral infarction while 80 per cent have been normal. Approximately 4 per cent have continued to have transient ischemic episodes in spite of the anticoagulant therapy. In a similar group of patients not treated with anticoagulants and followed up for a comparable period of time, 40 per cent had a serious cerebral infarct.6 Once anticoagulant therapy is instituted, it is recommended for an indefinite period since patients appear to be benefited only during treatment.

When anticoagulants are given for a progressing stroke, heparin is administered intravenously at the beginning of therapy because of the urgency due to the speed of progression. Simultaneously, coumarin drugs are given orally. After the therapeutic range of reduced prothrombin activity has been reached, the administration of heparin can be discontinued. With such a program for progressing stroke in the carotid system, about 7 per cent of the patients develop hemiplegia or die,

compared to more than 35 per cent when no treatment is given. When anticoagulant treatment is used in the course of progressing stroke in the vertebral-basilar arterial system, the mortality rate is less than 10 per cent, while the mortality rate is more than 50 per cent without treatment.<sup>5</sup>

Long-term anticoagulant therapy is also recommended for the prevention of embolic cerebral infarction in patients known to have a cause for embolic phenomena.<sup>7</sup> Although we have not usually recommended anticoagulant therapy for the treatment of the acute embolic cerebral infarct, some evidence has been cited to suggest that immediate treatment has lessened the morbidity and the mortality of such patients to some extent.<sup>8</sup>

Anticoagulant therapy is not recommended for patients who have had any recent episodes of bleeding or any cause to suspect ease of bleeding, or for patients who have active subacute bacterial endocarditis. In addition, anticoagulants are not used for focal ischemic attacks when they are so mild or so infrequent that the diagnosis is in doubt or for patients with mental incapacity unless another person can assume complete responsibility for the anticoagulant medication.

Surgical Treatment.—The surgical treatment of patients with ischemic cerebral vascular disease is limited at present to patients in whom extracranial arterial disease can be demonstrated. Following a clinical diagnosis of ischemic cerebral vascular disease, arteriography may be advised for patients with (1) an incipient stroke in either the carotid or vertebral-basilar arterial system, (2) a progressing stroke in either arterial system, or (3) a completed stroke, provided that only mild neurologic deficit is present or new episodes of transient ischemia have been superimposed. Patients for whom surgical intervention is most successful are those with incipient stroke who have localized stenosis but not occlusion of one of the cervical arteries leading to the cerebral circulation. Occluded arteries can be restored to normal circulation in less than 20 per cent of the cases, and only at some risk of cerebral embolization. For this reason we no longer recommend exploration of arteries which are judged to be completely occluded. This rule does not apply to occluded segments near the aortic arch since these can often be corrected by endarterectomy or by a synthetic arterial graft bypassing to a normal but more distal segment of the artery.

Stenosis of an extracranial artery accounting for the patient's symptoms is the most favorable circumstance for surgical treatment. Normal blood flow can be restored in almost all such patients. A little less than 70 per cent of these patients have been relieved of transient ischemic attacks of incipient stroke during the immediate postoperative period, with a surgical mortality rate of approximately 8 per cent. About 12 per cent of patients operated on may suffer a mild to moderate neurologic deficit as the result of the surgical procedure. In our opinion these deficits have occurred primarily as the result of embolic material from the operative site either at the time of, or soon after, the operation. After a follow-up period of as much as 3 years, the results of surgical treatment in this group are about the same as in the early postoperative period, indicating that patients generally did well over the long term, if there were no immediate complications from the surgical procedure.9

We have not had adequate experience to be able to assess whether the risk of arteriography and operation for patients with progressing stroke is so high as to negate any potential gain from restoration of normal blood flow. In our judgment the risk of arteriography is high in this group of patients. Crawford and associates<sup>10</sup> have reported that 17 of 22 patients with progressing stroke were asymptomatic in the late follow-up period after the surgical removal of extracranial arterial lesions. These results appear to be a substantial improvement over the status reported by Carter<sup>11</sup> among untreated patients with progressing strokes. However, the groups are not comparable since Carter's patients were not examined by arteriography, and undoubtedly some of them had intracranial arterial lesions.

If definitive surgical treatment can be accomplished while progression of symptoms is occurring, the patient probably will benefit from the intervention. Because progression of symptoms may be rapid in this group of patients, we institute rapid heparinization even if surgical intervention eventually is considered the best treatment.

Those patients with ischemic cerebral vascular disease who are most likely to benefit from the surgical repair of a cervical artery are those (1) with incipient stroke in the carotid system, and thus no neurologic deficit, (2) with decreased retinal arterial pressure on the appropriate side

for the transient symptoms, (3) with a localized bruit over the bifurcation of the appropriate carotid artery, but none over the globe of the eye or the cranium, (4) of an age relatively young for atherosclerotic arterial disease, (5) without other disease threatening their life, (6) with arteriographically demonstrated stenosis but not occlusion of the cervical internal carotid or common carotid artery, and (7) without stenosis or occlusion of intracranial arteries.<sup>9</sup>

All of these features need not be present in every patient who is to have surgical repair of a cervical artery, but the combination does constitute the ideal situation for surgical treatment.

Thrombolytic Therapy.—The possibility of lysing an intra-arterial thrombus by thrombolytic agents has been demonstrated in animals and man.<sup>12</sup> At present, the role that this form of therapy will assume in the treatment of strokes is not clear. Although thrombolytic agents are commercially available, standardization is still not uniform and controversy exists concerning the active element in the preparations presently available.

Because thrombolytic agents have not been used in any significant number of patients with incipient stroke, no generalization is possible concerning the efficacy of treatment in this group. Since the incidence of fresh thrombi occurring with progressing strokes is high, thrombolytic agents have the most promise in this category. If a completed stroke is associated with a fresh thrombus, either intracranial or extracranial, lysis of the clot by an intravenously or intra-arterially administered thrombolytic agent may afford the patient some future protection. Opening the artery cannot be expected to benefit the current completed infarct. The safety of such agents after recently completed cerebral infarction has been demonstrated in animals and in man to the extent that a thrombolytic agent administered intravenously in therapeutic amounts has not caused excessive hemorrhage within the recent cerebral infarct. 13,14

When thrombolytic agents are being used, it is also necessary to give anticoagulants simultaneously for a prolonged period. If anticoagulant therapy is not used, thrombosis may recur at the previous site when thrombolytic therapy is discontinued.

The thrombolytic agents currently available have not been entirely satisfactory for clinical trial, and therefore, their role has not been firmly established in the treatment of cerebral ischemic disease. Undoubtedly, clot-lysing agents will receive increasing attention during the next few years.

#### Summary

We have divided ischemic cerebral vascular diseases into three clinical categories: (1) the incipient stroke is characterized by episodes of transient neurologic deficit; (2) the progressing stroke is characterized by gradually progressing neurologic symptoms, and (3) the completed stroke is the stable cerebral infarct. Each of these clinical categories may occur in either the carotid or vertebral-basilar arterial system.

In recent years the therapeutic program in the management of strokes has been broadened to include the concepts of prevention of strokes and prevention of progression or recurrence of strokes.

Long-term anticoagulant therapy is recommended for patients with (1) incipient stroke, (2) progressing stroke, and (3) cerebral embolism when further emboli might be expected. Patients with completed infarction may require anticoagulant therapy if additional symptoms occur which are characteristic of a new incipient stroke or of a newly progressing stroke.

Patients with ischemic cerebrovascular disease, who are most likely to benefit from surgical repair of a cervical artery, are those (1) with incipient stroke in the carotid system, (2) with decreased pressure in the retinal artery on the appropriate side for the transient symptoms, (3) with a localized bruit over the bifurcation of the appropriate carotid artery, but none over the globe of the eye or the cranium, (4) of an age relatively young for atherosclerotic arterial disease, (5) without other disease threatening their life, (6) with arteriographically demonstrated stenosis but not occlusion of the cervical internal carotid or common carotid artery, and (7) without stenosis or occlusion of intracranial arteries.

Thrombolytic agents currently available are not entirely satisfactory for clinical trial; therefore, their role has not been established in the treatment of cerebral vascular disease.

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#### **EMOTIONAL FACTORS IN CORONARY DISEASE\***

M. E. Groover, Jr., M.D.\*\*

Among the factors thought to play a part in the cause of coronary heart disease, the role of the emotional ones seems to be the most contraversial. Perhaps if the term "emotional" were changed to "Neurovascular," we would find it more acceptable.

For a classic example of the effect of emotions in coronary disease, one might start with the story of John Hunter, whose famous words, "My life is in the hands of any rascal who chooses to provoke my wrath." were followed by his sudden death after a heated argument in a hospital staff meeting and the subsequent autopsy findings of myocardial infarction, confirming his prophesy.

This well-remembered event has greatly influenced the thinking of some individuals who have proposed that emotional factors can effect anatomical changes in the myocardium of man.

It is the purpose of this presentation to review some of the clinical observations in man illustrating the physiological changes that occur during periods of unusual emotional stress, the interrelation of these with some of the experimental observations in animals will illustrate the neurological pathways which may be involved in the production of this type of myocardial infarction.

First I would like to refer to a long term clinical study of five hundred eighteen executives in the United States Air Force Executive Health Program. Among these 21 developed a myocardial infarction during the first six years.

To determine the relationship between blood lipids and the occurrence of acute infarctions, a statistical study was done on a group selected by virtue of the fact that they had had six or more blood tests yearly for five years. One hundred eighty-seven individuals met these requirements. Among them were sixteen who had developed a myocardial infarction during the period of observation. Graphic analyses were made of these individuals and it was shown that all sixteen fell in the group showing the highest degree of fluctuation during this five-year period. Also they were among those showing the highest peak value during the five-year period. The correlation was much better

\*This article was presented at the Arkansas Oklahoma section of the American College of Physicians in Oklahoma City Oct. 6, 1962. \*\*800 N.E. 13th Strect, Oklahoma City, Oklahoma. in both instances than with the five year average. However, even with respect to the five year average, the cases of myocardial infarction were much more prevalent in the group showing the higher average cholesterol values.

This study suggests that there is a statistical relationship between blood cholesterol and the occurrence of an acute myocardial infarction. The correlation seems to be even better for the peak value and the degree of fluctuation. The sixteen individuals who developed acute infarctions were studied in more detail. Longitudinal graphs were prepared showing blood lipids and cholesterol of each patient for the entire five-year period, and the onset of the myocardial infarct was indicated to show the temporal relation to the behavior of his blood lipids. In every case there was a period of elevated lipoproteins and cholesterol immediately preceding the myocardial infarction with the exception of two individuals and blood samples were not obtained on these immediately preceding their infarction.

This study suggests that some common physiologic change may be associated with both the fluction of serum lipids, and the occurrence of acute myocardial infarction. It is difficult to see any direct cause and effect relationship between the two.

In the light of our present knowledge, we felt that the serum cholesterol values were less important than the physiochemical characteristics of the blood plasma. We have designed a method whereby we could observe the electrical activity of plasma elements in terms of their mobility on the paper electrophoresis strips.

We became particularly interested in studying the mobility of the Beta Lipoprotein peak for an indication of its electro physical character. By relating the mobility of the Beta Lipoprotein peak to that of the Albumen peak, it was possible to study the differences that might exist between normal individuals and those with acute myocardial infarction. The response of the two groups to a standard dose of Heparin was found to be quite different. Some patients with angina or recently recovered from an acute infarct had a relatively low initial value, a poor response to

Heparin stimulation with a rapid return to the pre-treatment level.

To test this idea, six patients recovering from acute myocardial infarction were given the standard Heparin response test in which 4000 units of Lipo Heparin per twenty pounds of body weight were injected into the subcutaneous fat of the abdominal wall. These patients were matched with healthy control individuals of comparable height, weight, age and job characteristics. The healthy controls were distinctly different from the myocardial infarction group in that their initial Beta Lipoprotein mobility was considerably greater, their response to the standard injection of heparin was more pronounced and the effect was much more prolonged. In some of the healthy controls the effect of this standard heparin injection was apparent for a period of twelve to fifteen weeks. We have observed that some patients, during periods of emotional tension, develop detectible amounts of lipid mobilizer factor in their blood. Arrangements were made for Siefter and Baeder1 to do assays for L.M. factor, on a group of clinic patients. Blood from 100 consecutive clinic visitors was drawn, plasma and red cells separated and the plasma was divided into two aliquots, one sent to the electrophoresis laboratory and the other sent to the lipid mobilizer assay laboratory. Satisfactory duplicate reports were obtained on 82 patients, of these 41 exhibited a Beta Lipoprotein mobility of less than ten millimeters and in this group twenty-five contained detectible amounts of lipid mobilizer material.

In the forty-one individuals with the Beta Lipoprotein mobilities of more than 10 millimeters, only four individuals had a positive assay for lipid mobilizer factor. In the group with reduced Beta Lipoprotein mobility, 17 patients complained of chest pain which we were unable to diagnose at the time the blood was drawn. Only one of these individuals had a Beta Lipoprotein mobility of more than ten millimeters. Six of the patients with a history of recent myocardial infarction, fell into the group whose Beta Lipoprotein mobility was less than six millimeters and two of the patients with undiagnosed chest pain at the time the blood test was drawn subsequently developed a fatal myocardial infarction with autopsy findings confirming the clinical diagnoses.

Many examples of individual cases can be cited

showing that they fit well into the pattern of these statistical studies. One very typical illustration was that of a public official who, some months previously, had acted in a manner that was not for publication. When it was discovered by an alert member of the press, the results were disastrous. The resulting situation was analogous to that of being caught in a trap. The violent biochemical changes that resulted from this situation are interesting. This particular patient had recovered from a myocardial infarction eleven months previously and had just left the clinic where his monthly blood test had been drawn, and had gone directly to his office where his secretary met him with the morning paper, informing him that the boss was anxious to see him. In less than an hour, the blood cholesterol had increased more than 100% and there was a fall in serum magnesium, a decrease in mobility of the Beta Lipoprotein and the appearance of lipid mobilizer factor in the blood, all seemingly associated with the severe emotional tension of this specific situation.

There are many traps in which the modern executive may be caught. Not all of them are of his own making. They sometimes develop around him so slowly that he may not realize it. This happened to one of the most respected men in his field. He became involved with a series of frustrating and unanswerable problems in such a manner that he could not escape the ever increaseing demands upon his time and energy. His blood cholesterol and total Lipoproteins had begun to rise and when he developed an acute upper respiratory infection, these changes became greatly magnified. He was extricated from this trap by being hospitalized and sedated with belladonna and papaverine and was heparinized. The trap closed around him again three years later but the situation was much more acute at this time and his physician was unable to remove him from his environment. He was found dead in bed just eight days after attempts were made to get him into the hospital.

These brief case reports are only two of many similar cases which could be cited to illustrate the biochemical changes that occur during periods of emotional tension and the myocardial infarction is in some unknown way related to these changes.

Animal experiments have shown that certain neurological mechanisms exist whereby some of the biochemical changes accompanying emotional tension in man might be explained.

Manning and Hall² have shown that electrical stimulations of the Vagus nerve can produce myocardial infarction. They also showed that eserine will augment the myocardial necrosis and atropine will to a certain extent, prevent it. The Russian physiologist, D. I. Miminoshvili³ has produced myocardial infarction in baboons by the induction of experimental neuroses.

It was not until the work of C. G. Gunn<sup>4</sup> of the University of Oklahoma that many of the loose ends of this problem began to fit together. Dr. Gunn not only confirmed the work of Manning and Hall<sup>2</sup> but has shown that transient elevations in serum lipid can be produced by chronic stimulation of areas of the anterior hypothalmus and that cardiac arrythmias and areas of electrical stimulation of the hypothalmus. The most significant part of Dr. Gunn's work in this field is the production of atherosclerosis in animals maintained on an atherogenic diet and subjected to hypothalomic stimulation.

One of the baffling points in this work is the lack of structural change in the coronary vessels supplying the necrotic area in the hearts of experimental animals. We have studied these areas by making vinyl plastic casts of the involved coronary vessels. When the infarcted area is located by acid resisting threads and photographed, the tissue removed from the coronary tree by acid digestion it is easy to demonstrate the patent coronary vessel traversing the infarcted area. We have been unable to demonstrate any evidence of atheroma or other obstructive intravascular lesions in our experimental animals. While there is no proof,

the evidence suggest that stimulation of the vagus nerve causes prolonged vasco constriction resulting in irreversable damage to the myocardium. While we have been unable to predict the location of the lesion on the myocardium that results from vagus stimulation, they usually involve the anterior part of the septum the papillary muscle and the aortic ring area.

An attempt has been made to show that there are neuro pathways by which the energy of emotional strain may reach the myocardium. Experimental myocardial infarctions have been produced by neuro stimulation and by induced neuroses in animals. Futhermore, chronic hypothalomic stimulation of animals on an atherogenic diet will produce atherosclerosis and will produce elevated serum lipids in animals on a normal diet.

Finally, clinical observations in man bare a striking resemblance to events induced in the laboratory allowing us to postulate that multiple factors were important in the production of myocardial infarction among which intense emotional strain is certainly important.

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#### Arteriosclerosis of Aortic Sinuses

W. F. Enos, J Beyer, and R. Holmes, Amer J Clin Path 39:506 (May) 1963

Arteriosclerosis of the aortic sinuses can result in narrowing or obliteration of the coronary ostia. Two cases are presented in which the primary cause of death was occlusion of the coronary ostia due to arteriosclerosis. Fifty hearts were studied from routine autopsy material as well as 50 hearts from autopsies on soldiers killed in Korea. The size, number, and location of ostia, the pattern

and degree of arteriosclerosis graded from 0-4, the distortion and narrowing due to arteriosclerosis of ostia, and the number of fenestrations in the semilunar valves are discussed. In 4 instances myocardial fibrosis and scarring was attributed to ostial narrowing rather than to arteriosclerosis of the main stem coronary arteries. By causing relative myocardial anoxia resulting in myocardial fibrosis, coronary ostial stenosis due to arteriosclerosis may induce or contribute to development of heart failure especially in older people.



#### **PLASTIC SURGERY**

James G. Stuckey, M.D.\*

One of the most frequent questions asked this writer by his medical colleagues is, "When do you like to operate on the cleft lip and cleft palate patient?" In the next few paragraphs I will answer this question, and present the newer concepts in the care of these patients.

The incidence of cleft lip and cleft palate is approximately one in every 750 to 1000 births, depending on whose statistics you are quoting. The infant has a 50% chance of having a cleft lip and cleft palate. It has a 25% chance of having a cleft lip alone, and a 25% chance of having a cleft palate alone. The cleft lip defect occurs four times more commonly on the left. It is extremely important to remember that this defect occurs somewhere between the tenth to twelfth week of fetal life. Why this defect occurs we do not know. In certain strains of rats that have had this quality inbred, it has been possible to produce this defect by limiting certain of the vitamins from the mother's diet. When the vitamin complexes are replaced, the mother ceases to give birth to these litters of cleft lip and cleft palate offsprings. In carrying this laboratory data over to human beings, we know that approximately 25% of the cases give a history of having had an improper diet during the first trimester of pregnancy. This may be because of hyperemesis, other illnesses, or because of the social strata of the patient. We know that in malnourished societies the incidence of cleft lip and cleft palate is higher than in well nourished people. In another 25% of the cases, we are able to trace a family background of this deformity. In 50% of the infants we are unable to account for this abnormality. The only preventive measure that we can take is the administration of high potency vitamins as soon as the mother recognizes that she is pregnant, or even before when the pregnancy is planned.

Now to the care of the infant itself. Feeding is a problem, and the easiest way to do this is with an asepto syringe with a soft rubber tip on it.

The lip should be repaired as soon after birth as the infant has regained its birth weight, providing it weighs at least seven pounds. This is usually the tenth to the twelfth day. It is worth mentioning that some insurance policies will not pay for surgery on an infant until it is at least two weeks of age. When this is a factor, it does not hurt to delay the operation a few days. If the baby has a bilateral cleft lip, the lip should be closed in two stages, the stages being approximately six weeks to two months apart. By doing this, a wider, fuller, and more pleasing lip can be obtained. The parents can expect to have the baby hospitalized twelve days for repair of the lip. After the infant is discharged, the mother feeds it with a regular soft rubber nipple with enough holes in it so that the milk will drip out without shaking when the bottle is held nipple down, but it should not stream out, as this will strangle the baby.

I like to see the baby a month after discharged, and then once a year to observe its growth. Any slight defect that may have been made in the lip at the time of repair will be magnified many times as the child grows. I believe the lip should be gotten as nearly normal as possible before the child goes to school. Usually, this can be done with the original operation, but occasionally we

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have to make some slight adjustments around the age of six.

Most cleft lips have a deformity of the ala cartilage of the nose as part of the defect. It is almost impossible to correct this in infancy, and I prefer to make the final correction of the nose after the child has reached facial maturity. This occurs around the age of twelve to thirteen in girls, and fourteen or fifteen in boys.

The cleft palate operation is performed at about the age of two years. It is very important that the child should have been receiving a regular balanced diet since birth, and that the hemoglobin be approximately 12 gms. Some mothers are afraid to give the baby solids, thinking the food will get stuck in the cleft, but this is not true. The child should be in as near perfect health as possible, and certainly should not report to the hospital with an upper respiratory infection, red ear, etc. The parents can expect to have the child hospitalized approximately one week for the cleft palate procedure. The age of two is chosen because the patient is large enough to make the operation technically feasible, and because the child in most cases has not started to talk at this point. It is most desirable for them to learn to speak with their palatal mechanism intact.

It may seem rather paradoxical, but the smaller the defect in the palate, usually the worse the speech. This is because the partial cleft palate frequently is very short, and may have improper muscular development. With a complete cleft palate, the defect can be closed in one operation. With the short incomplete palate, two procedures are done at the same time. These procedures are the closure of the defect, and a palate set-back operation to give additional length. Another operation is sometimes necessary if the child has abnormal speech. This procedure is a pharyngeal flap, whereby a mass of tissue from the pharynx is sutured to the palate. I do not do this precedure

routinely, as approximately 75% to 80% of the patients who have the primary closure, with or without the set-back, will have essentially normal speech. In the remaining group who do not have normal speech, the pharyngeal flap operation will usually suffice.

The palate is closed to give the patient normal velopharyngeal closure. This prevents the flow of liquids from the mouth through the nose, and also prevents the nasality of speech.

There is a direct correlation between the intelligence of the parents and the speech result. Speech therapy is usually started around the age of four, or when the child is old enough to take instruction. Its purpose is to teach the child to pronounce his words with the tongue and teeth in the proper position. The consonant sounds are the ones these patients have difficulty with. The vowels are mouth sounds, and do not require velopharyngeal closure. Good muscle exercises for the palate are sucking or blowing through a straw, and blowing a whistle or horn. Occasionally, we find a patient who does not have any muscular movement of the palate. These children seem to get a better speech result from a prosthesis which completely occludes the posterior pharyngeal area.

A question frequently asked by the parents is, "What are the chances of us having another deformed baby?" If the parents have no family history of this deformity, and the mother is able to keep a good nutritional status during the first three months of pregnancy, and is given her high potency vitamins, the chances are one in twenty-five that she will have another deformed infant. If a patient with this defect marries a normal individual, the chances of them having deformed children is one in twenty. If the mother and father both have cleft lip or cleft palate deformities, the chances are 50-50 that their children will have the same defect.

#### TEACHING SEMINAR

University of Arkansas Medical Center Little Rock, Arkansas



#### TENNIS ELBOW

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Since it was first described by Runge in 18733, "tennis elbow" is the term that has been applied to a chronic disabling condition affecting the lateral aspect of the elbow. Although European writers refer to this condition as lateral epicondylitis, it is more commonly known as "tennis elbow" in the United States and England. The term "tennis elbow" was applied after it was noted that people, whose occupation (i.e. tennis players, pipefitters, carpenters, etc.) involved rapid pronation and supination of the extended wrist, were found to be victims of this disabling condition. These common terms for syndrome are rather unsatisfactory for they do not indicate the true pathology and, inasmuch as the true pathology is obscure, it seems that the term "tennis elbow" will remain as the commonly accepted term among members of the medical profession. American and European literature is replete with many articles recommending various conservative and surgical approaches to this problem. This, in itself, points out the void in our information about this syndrome. Regardless of our poor understanding of the patho-physiology of this syndrome, patients with the symptoms of tennis elbow are seen in the everyday practice of many physicians and warrant attention and treatment.

Specifically, tennis elbow seems to be a disease involving degeneration of collagen fibrils in the region of the attachments of the lateral collateral ligaments, the aponeurotic origin of the extensor muscles of the wrist, the synovium and capsule of

the radiohumeral joint, and in the orbicularis ligament that maintains the normal anatomical relationships of the radiohumeral joint during elbow motion. In this respect, it is similar to degenerative disease seen elsewhere in the body such as the rotator cuff of the shoulder joint, etc. It is usually considered a minor ailment by everyone except the person afflicted. Although it is considered a self limiting disease, it may persist for twelve to eighteen months causing considerable economic loss to the patient. There is little reason to believe it is a true periostitis or epicondylitis as suggested by some European writers. It is equally as frequent in male and female patients and usually occurs in the 30 to 50 year age range. It is uncommon to see it in a patient over 60. Because of its association with more than usual activity of the hand and elbow, it is most often found on the dominant side of the patient. There is universal agreement that a patient with tennis elbow will present himself with the following cardinal complaints: (1) persistent and sometimes intense pain over the lateral and posterior aspects of the elbow, (2) pain upon extension of the wrist and thumb, (3) weakness of the grasp of the hand. With such complaints as these, cervical radiculitis may be misconstrued as the cause of these symptoms.

The examining physician may find a paucity of definite signs or, on the other hand, he may find all those known findings of this disease. Tenderness may be located in several different areas

of the elbow. The epicondylar ridge of the area may be quite tender. The adjacent lateral epicondyle, which is the site of the attachment of the extensor radialis brevis, may also be quite tender or may be the only tender spot. In addition, the palpable radiohumeral joint may be the site of the maximum tenderness. Upon occasion, one may palpate tenderness at the site of the orbicularis ligament or the lateral collateral ligament of the elbow. Extension of the wrist or thumb will intensify pain in these areas. Occasionally, tender areas may be palpated over the muscle mass of the extensors of the wrist and their tendons. Although full pronation and supination may be present, the patient will usually be unable to fully extend his elbow. By comparing grasp between the affected and unaffected sides, it can be determined that there is considerable weakness of grasp on the affected side.

Radiological and laboratory examinations offer very little assistance in ascertaining the cause of the patient's complaints. X-ray examination of the elbow is usually negative. A fleck of bone seen on the X-ray may suggest avulsion of the muscle attachments in this area. Arthritic changes or abnormal configuration of the radiohumeral joint may suggest these entities as a cause of the patient's symptoms. Usually, there are no alterations in blood chemistry or hematological studies.

#### **Pathology**

Etiology and demonstrated pathology in this condition has been quite obscure. As mentioned above, collagen degeneration within the ligamentous structures has been demonstrated, particularly, in the orbicularis ligament<sup>1</sup>. Trethowan and others<sup>2</sup>, <sup>7</sup> have demonstrated hyperemic or traumatized synovial fringes in the radiohumeral joint. Still others have become concerned with the possibility of peripheral neuritis as the etiology of this symptom and have carefully demonstrated the nerve supply to the area4 and have subsequently suggested denervation of these sensory fibers as treatment<sup>6</sup>. A partial tear of the common extensor mass in the region has long been thought to be the local pathology and many authors have felt that an incomplete tear does not permit satisfactory healing and urge that only completion of the tear will permit complete healing of the lesion4. Still others feel that fibrous contracture of the muscle mass in the region of the arm is responsible for the signs and symptoms<sup>3</sup>. Periostitis and local inflammatory changes have

been incriminated by others as the basic pathology. Such a variety of theories as to the etiology of this syndrome demonstrates that the pathology is not really understood. The demonstrable hyalin degeneration shown in some of the material of Boswirth, and similar demonstrations in tendon and ligamentous structures elsewhere in the body, leads one to conclude that this syndrome probably is the result of collagen degeneration within the fibrous structures of the area. Localized collagen degeneration seems to be the most acceptable theory as to the etiology of this syndrome at present.

#### **Treatment**

In spite of our relative lack of information about the etiology and pathology of tennis elbow, treatment of patients with this syndrome has been rather satisfactorily evolved on an empiric basis. Severity of pain is one of the major factors in bringing the patient to a physician; therefore, it is quite likely that a large number of patients do not seek medical care because they are able to tolerate relatively mild symptoms until this self limiting disease has run its course.

Inasmuch as an affected joint responds to rest and immobilization, regardless of the pathology involved, it is reasonable to assume that this will assist the patient with tennis elbow. A posterior splint maintaining the elbow at 90 degrees flexion and with the forearm and wrist in mid-supination and maintaining the wrist itself in a dorsi-flexed position is rather satisfactory. If this proves to be to much of an encumbrance to the patient, a simple cock-up splint applied to the wrist and forearm as well as partial immobilization of the elbow in a sling will be quite helpful.

Heat applications, either moist or dry, have been found to be quite effective. Ultrasonic waves, which are a form of dry heat, have also been effective in alleviating some of the patient's symptoms. Of course, analgesics and sedation are quite essential as adjuvants in the management of those cases with rather severe symptoms.

Manipulation of the elbow has been advocated by Cyriax and others on the basis that manipulation will stretch out contracted muscle masses of the wrist extensors and also will convert the incomplete tear of the aponeurotic origin of the wrist extensors into a complete tear; thus, allowing uniform healing to occur in the entire aponeurotic origin area. This type of treatment has found little favor among American practitioners but has been recommended highly by a number of British authors<sup>2</sup>.

With the advent of hydrocortisone there has been marked success in the treatment of symptoms of these patients. Garden reports that at least 65% of patients responded satisfactorily with one intra-articular injection of hydrocortisone<sup>4</sup>, and that still another 10% responded to a second injection. With at least 75% responding to one or two injections of hydrocortisone and since an additional group may respond to the third or fourth injection, one would expect that failure to manage tennis elbow by these conservative methods would be rather uncommon. Systemic steroids are not indicated as treatment of tennis elbow.

The technique of the above mentioned injection requires some discussion. Although this procedure is easily done in the office, it requires many of the precautions that one observes in the operating room suite. Introduction of bacteria from the skin into the joint or adjacent tissues is always a possibility in this type of procedure. It is recommended that the skin be washed thoroughly with one of the surgical soaps used in the operating room and that the physician don sterile surgical gloves for palpation of the area in which this injection is to be carried out. It is preferable to precede the actual introduction of hydrocortisone with an injection of procaine or other local anesthetic into the area and then to follow this with hydrocortisone injection from a separate syringe. Combination of the local anesthetic and hydrocortisone in the same syringe may contaminate either of the vials in which these preparations are supplied. As a general rule, the site of maximum tenderness is the area in which the local anesthetic agent and the hydrocortisone are to be injected. It is the feeling of many physicians that an additional injection into the radiohumeral joint itself should be carried out in spite of the fact that the patient's maximum tenderness may be some distance from the radiohumeral joint area. This joint will accept approximately one cubic centimeter of anesthetic agent and one half cubic centimeter (25 to 50 milligrams) of hydrocortisone. There is often immediate and dramatic relief due to the local anesthetic agent, but the lasting relief is thought to be due to the anti-inflammatory action of the hydrocortisone. Symptoms may re-appear after a hydrocortisone injection and if this be the case it is very easy to

repeat the injection. As many as six to eight hydrocortisone injections at one to two week intervals may safely be used in treatment of tennis elbow.

The surgical treatment of tennis elbow has been even less satisfactory than conservative measures and undoubtedly this is related to our failure to determine the etiology and pathology of the syndrome. Fortunately, very few patients have symptoms of severe enough nature and the concomitant failure of conservative management that warrants surgery. Five different surgical procedures have been recommended for those patients resisting conservative measures. Each of these surgical procedures is based upon a different hypothesis as to the etiology and pathology.

The oldest surgical form of therapy is that of transection of the aponeurotic origin of the wrist extensors and re-suturing them so that an incomplete tear, if present, may heal uniformly. Inasmuch as the patient is usually immobilized for six weeks in plaster following the procedure, it may be the rest that has been more important in obtaining satisfactory results by this method.

Bosworth, believing that degeneration of the orbicularis ligament as a local phenomenon is responsible for symptoms, has recommended simple transection of this ligament and rapid return to active function thereafter. He has not reported any dislocation of the radial head from the radio-humeral joint as the result of this procedure. His original article presented rather statisfactory results by this method of treatment<sup>1</sup>.

Trethowan recommended arthrotomy and excision of hypertrophic synovium as the preferred surgical treatment in this syndrome. Once again, post-operative immobilization may play some part in results achieved by this method.

Believing that peripheral neuritis of the radial nerve was responsible for symptoms of tennis elbow, Kaplin has devised and recommended a technique of denervation of the local area by careful dissection of the radial nerve and its branches in this area<sup>6</sup>. He then transects those sensory fibers supplying the joint. He recommends that a pre-operative test injection of the radial nerve with a local anesthetic proximal to the branching of the sensory fibers be carried out in an effort to ascertain if the surgery will assist any given patient. Being a relatively new surgical approach to the problem, there is limited experience as the results of this procedure<sup>5</sup>.

The fifth and most recent recommendation in the surgical treatment of tennis elbow is that of Garden who has recommended lengthening of the extensor carpi radialis brevis tendon in the lower forearm as treatment of this syndrome<sup>3</sup>. He based this recommendation on the fact that the origin of the extensor carpi radialis brevis is on the lateral epicondyle as well as from the lateral collateral ligament of the elbow joint. Contracture of the extensor origin of this muscle contributes to the aggravation of the symptoms by use of the wrist extensors. He reasoned that if the tendon could be lengthened and allowed to heal, that restoration of the normal isometric length of the muscle and tendon would alleviate the symptoms. He has performed this procedure on some 50 patients. There is virtually no experience among American surgeons in lengthening this tendon as treatment of tennis elbow.

It would seem that most American surgeons feel that a combination of these procedures is the most efficacious form of surgical treatment of tennis elbow. Very few surgeons are willing to recommend the denervation technique of Kaplin or the tendon lengthening procedure of Garden as a primary procedure. Combined arthrotomy of the radiohumeral joint and excision of hypertrophied synovial fringes, section of the aponeurotic origin of the wrist extensors, and simple transection of the orbicularis ligament as one procedure, followed by a short period of immobilization, is usually recommended as the surgical treatment of choice for tennis elbow.

#### Summary

This seminar has discussed tennis elbow, one of the disabling orthopedic conditions that are seen in everyday pratice by many physicians. It has pointed out that the disease is often quite disabling but that not all patients require or seek medical attention. Those patients who seek medical attention are of necessity treated on an empiric basis, for the true etiology and pathology of this disease is not known. Fortunately, conservative management of these patients is usually quite satisfactory. This is particularly true of those patients for whom the treating physician elects to treat with injections of hydrocortisone and local anesthetic. The most difficult patients to manage, of course, are those who fail to respond to carefully supervised management. The advantages and disadvantages of several different surgical techniques as treatment of those patients whose disease fails to make a satisfactory response to conservative management have been presented. Although most physicians recommend surgery as treatment of the resistant pathology in these patients, the great majority of physicians rendering such treatment prefer to combine several of the recommended surgical procedures, for they acknowledge that the true pathology has yet to be elicited in this disease.

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#### Ultrastructure of Adenocarcinoma of the Colon

H. Imai and A. A. Stein, *Gastroenterology* 44:410 (April) 1963

Four adenocarcinomas of the large intestine were studied by electron microscopy and contrasted with normal colonic epithelium. The most striking alterations in ultrastructures were in the cell surfaces and basement membrane. The basement membrane appeared less defined and thinner than normal, having numerous focal disrup-

tions. In places the membrane was perforated by cytoplasmic projections of the carcinoma cells, which extended far into the stroma. The free luminal surfaces had sparse and irregular microvilli. The intercellular borders were modified by terminal bars and interdigitations, which appeared disorganized and excessive or sparse. Such irregularity of the basement membrane and cell surfaces demonstrated ultrastructurally are believed to be related to the invasive phenomenon of colonic carcinoma.



#### WHAT IS YOUR INTERPRETATION?

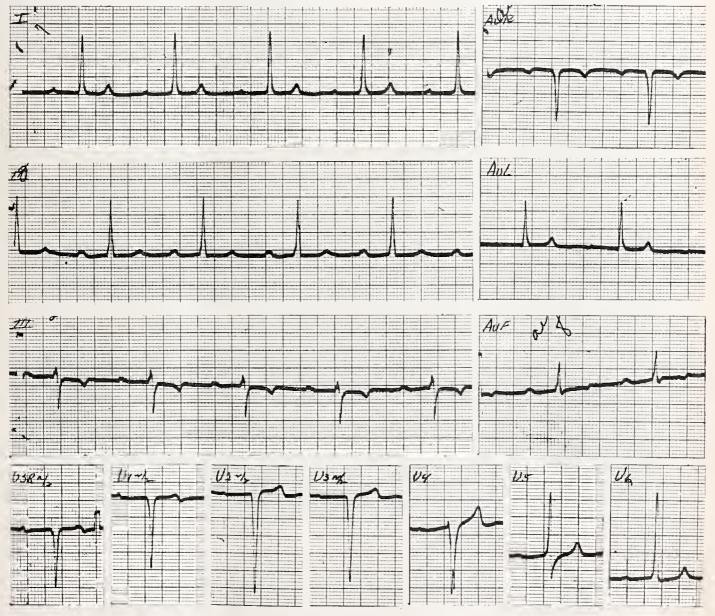
AGE: 58 SEX: M BUILD: SLENDER BLOOD PRESSURE: 140/50/20

MEDICATION: None

History: Aortic insufficiency, left ventricular hypertrophy first discovered in

1956. Increasing dyspnea on exertion.

#### Answer on Page 120

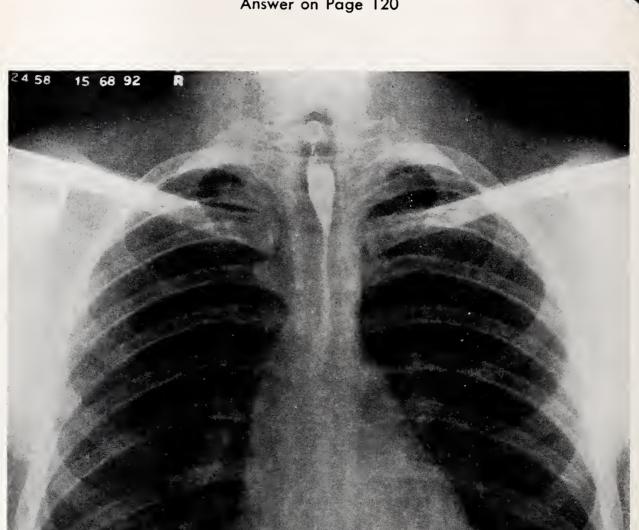


The Department of Medicine, University of Arkansas Medical Center
\*James S. Taylor, M.D., Professor of Medicine

#### WHAT IS YOUR DIAGNOSIS?

Prepared by the Department of Radiology, University of Arkansas School of Medicine, Little Rock

Answer on Page 120



History: This young Air Force man was apparently well at the time this film was made. A heart murmur had been discovered four months before on routine physical examination.



#### PUBLIC HEALTH AT A GLANCE

# Distribution of Arkansas Births and Neonatal Deaths 1958 Through 1961

The distribution of Arkansas births, neonatal deaths, and neonatal death rates is reviewed periodically by the Arkansas State Board of Health. The neonatal death rate, the number of deaths in the first 28 days of life per 1000 live births, is calculated for given areas, for given periods of time, and for births grouped according to some characteristic such as place of birth. This rate reflects to some degree the health status of mothers and children in an area, in a period of time, or in a specified group.

Data from the Bureau of Vital Statistics of the Arkansas State Board of Health was recently reviewed for the period 1958 through 1961. Births and neonatal deaths were tabulated and neonatal death rates computed by year, by county, and by place of delivery. The neonatal death rate for the state as a whole was calculated for each of the four years. In calculating this rate by county and by place of delivery, the data for the four year period was pooled to give a larger number of events on which to calculate each of these rates.

When evaluating any statistical data, certain points should always be considered. The method of handling the data and the source of the data must be known. The National Office of Vital Statistics tabulates vital events mainly by place of residence of the person involved. The Arkansas State Bureau of Vital Statistics tabulates vital events according to place of occurrence. An infant born in Memphis to an Arkansas mother would be tabulated as an Arkansas birth in the National Office of Vital Statistics reports, but would not be reported to the Arkansas Bureau. For this and other reasons there is a slight difference between National Office of Vital Statistics figures and those from the Arkansas Bureau of Vital Statistics. This data is more quickly available from the Arkansas Bureau, and is available in more detail. Arkansas Bureau of Vital Statistics data is used here, as elsewhere, to follow trends and to study local patterns.

Variability in reporting must also be considered in interpreting data. Completeness and quality of reporting of vital events will vary. For example, a hospital which routinely obtains Apgar scores on newborns will be more likely to note signs of life in a newborn than will a midwife. An infant, reported by the hospital as a live birth followed by neonatal death, might have been reported as a stillbirth if delivered by a midwife. A woman delivering without an attendant might not report the event at all. This variation in completeness and quality of reporting will affect statistics on births and neonatal deaths.

When dealing with a small number of events, chance alone can markedly alter the rates based on these events. Consider, for example, a county which has approximately 50 births per year. With an overall neonatal death rate of 19.0 per 1000 live births for the United States in 1959, one neonatal death per year might be expected in this county. By chance alone, it is likely that no neonatal deaths would occur in this county in a calendar year, giving a neonatal death rate of 0. However, if a woman in this county delivers triplets prematurely and all three infants die, the neontal death rate would be at least 60 that year. Caution must be used in interpreting rates based on a small number of events.

According to the National Office of Vital Statistics and Arkansas Bureau of Vital Statistics figures, Arkansas has a neonatal death rate slightly below the national average. For 1959 the National Office of Vital Statistics reports a neonatal death rate of 19.0 for the United States, and of 17.2 for Arkansas. Bureau figures give neonatal death rates for Arkansas of 16.0 for 1958, 15.4 for 1959, 15.8 for 1960, and 15.5 for 1961. According to National Office of Vital Statistics reports,

neonatal death rates for the states varied for 1959 from a low of 15.3 for Utah, up to 24.0 for Mississippi, 25.7 for Alaska, and 27.6 for the District of Columbia.<sup>1</sup> The wide variability in this rate indicates that it could be improved in most parts of the country. It is likely that the variation in this rate reflects varying socio-economic levels, and varying availability and quality of medical care.

In order to study births and neonatal deaths in Arkansas in more detail, birth and neonatal death data from the Bureau of Vital Statistics was tabulated according to county of birth and according to hospital or place of birth. Hospitals were grouped according to the number of births per year. Births and neonatal deaths subdivided by hospital groupings were then subdivided by birth weight allowing for calculation of neonatal death rates for each hospital group and for different birth weights. Neonatal deaths are reported according to county and place of birth. A neonatal death of an infant born in a hospital in one county who died in a hospital in another county would be attributed to the county and hospital of birth, not to the county and hospital of death.

Arkansas births and neonatal deaths for the years 1958 through 1961 were tabulated by county. Twelve counties (Table I) had over 4,000

					Total Neonatal Deaths	Neonatal Death Rate per 1000 Live Births	Premature Rate per 100 Live Births	Non-white Births percent of
		Births			1958-1961	1958-1931	1958-1961	4 vr. total
1958	1959	1960	1961	Total				
7615	7760	7406	7452	30233	636	21.0	9.8	30.6
2280	1921	1803	1877	7881	94	11.9	5.9	8.1
1843	1989	2080	1925	7837	121	15.4	7.4	45.9
1780	1692	1916	1981	7369	165	22.4	7.6	36.2
1379	1366	1291	1307	5343	66	12.4	8.5	66.2
1225	1288	1335	1375	5223	80	15.2	7.8	1.0
1254	1247	1201	1309	5011	78	15.6	8.3	65.4
1164	1112	1097	1115	4488	94	20.9	8.2	4.2
1150	1048	1166	1122	4486	58	12.9	10.5	71.8
1126	1044	1102	1093	4365	72	16.5	7.2	40.2
1035	1056	1026	971	4088	54	13.2	6.8	16.0
1270	995	877	941	4083	68	16.7	8.9	37.4
41,716	41,177	40,784	41,554	165,231	2,598	15.7	7.7	29.8
	7615 2280 1843 1780 1379 1225 1254 1164 1150 1126 1035	7615 7760 2280 1921 1843 1989 1780 1692 1379 1366 1225 1288 1254 1247 1164 1112 1150 1048 1126 1044 1035 1056 1270 995	7615         7760         7406           2280         1921         1803           1843         1989         2089           1780         1692         1916           1379         1366         1291           1225         1288         1335           1254         1247         1201           1164         1112         1097           1150         1048         1166           1126         1044         1102           1035         1056         1026           1270         995         877	1958         1959         1960         1961           7615         7760         7406         7452           2280         1921         1803         1877           1843         1989         2080         1925           1780         1692         1916         1981           1379         1366         1291         1307           1225         1288         1335         1375           1254         1247         1201         1309           1164         1112         1097         1115           1150         1048         1166         1122           1126         1044         1102         1093           1035         1056         1026         971           1270         995         877         941	1958         1959         1960         1961         Total           7615         7760         7406         7452         30233           2280         1921         1803         1877         7881           1843         1989         2080         1925         7837           1780         1692         1916         1981         7369           1379         1366         1291         1307         5343           1225         1288         1335         1375         5223           1254         1247         1201         1309         5011           1164         1112         1097         1115         4488           1150         1048         1166         1122         4486           1126         1044         1102         1093         4365           1035         1056         1026         971         4088           1270         995         877         941         4083	Births         Neonatal Deaths 1958-1961           1958         1959         1960         1961         Total           7615         7760         7406         7452         30233         636           2280         1921         1803         1877         7881         94           1843         1989         2080         1925         7837         121           1780         1692         1916         1981         7369         165           1379         1366         1291         1307         5343         66           1225         1288         1335         1375         5223         80           1254         1247         1201         1309         5011         78           1164         1112         1097         1115         4488         94           1150         1048         1166         1122         4486         58           1126         1044         1102         1093         4365         72           1035         1056         1026         971         4088         54           1270         995         877         941         4083         68	Births   Neonatal Deaths   Page 1000	Neonatal Deaths   Live Births   1958   1959   1960   1961   Total   7615   7760   7406   7452   30233   636   21.0   9.8

Source: Bureau of Vital Statistics Arkansas State Board of Health

births (1000 plus per year) in this period. The neonatal death rate for these counties varied from a low of 11.9 in Sebastian County to a high of 22.4 in Mississippi County. Since the neonatal death rate for non-whites is higher nation wide than for whites, it might be expected that this variation would correlate with the percent non-white births in a county. This does not seem to entirely explain the variation in Arkansas. For this four year period Jefferson County with a neonatal death rate of 15.4 had 45.9% non-white births, and Phillips County with a neonatal death rate of 15.6 had 65.4% non-white births. In contrast, Mississippi County with a neonatal death rate of 22.4 had 36.2% non-white births, and Pulaski County with a neonatal death rate of 21.9 had 30.6 non-white births. Some of the variation in

Source: Bureau of Vital Statistics, Arkansas State Board of Health

this rate may reflect a referral of complicated cases to specialists and to large hospitals. This factor and the factor of possible occurrences in Memphis of neonatal deaths of Arkansas born infants may account for low neonatal death rates in some of the counties such as St. Francis County and Crittenden County which have a relatively large proportion of non-white births. Since many factors will affect births and neontal deaths, each county must analyze its data individually and compare its data with that from other counties with similar problems. From Table I such comparisons can be made for the larger counties. The figures in the table must not be interpreted too rigidly for the reasons given in the earlier part of this report. The variability when dealing with

#### FEATURES

Group		0 to 2 lb., 3 oz.	2 lb., 3 oz. to 3 lb., 5 oz.	3 lb., 6 oz. to 4 lb., 6 oz.	4 lb., 7 oz. to 5 lb., 8 oz.	5 lb., 9 oz. Plus	Weight not Reported	Total
Group 1	Births	286	362	720	2,527	39,166	194	43,255
(1000 births +	Neonatal Deaths	210	171	102	89	181	65	818
per year) 6 Hospitals	Neonatal Death Rate per 1000 L. B.	734.3	472.4	141.7	35.2	4.6	335.1	18.9
Group II	Births	155	191	419	1,374	24,213	1,033	27,385
(500 to 999	Neonatal Deaths	82	72	44	44	105	34	381
births per yr.) 11 Hospitals	Neonatal Death Rate per 1000 L. B.	529.0	377.0	105.0	32.0	4.3	32.9	13.9
Group III	Birtlis	202	337	710	2,506	46,868	495	51,118
(100 to 499	Neonatal Deaths	105	144	111	77	215	72	724
births per yr.) 54 Hospitals	Neonatal Death Rate per 1000 L. B.	519.8	427.3	156.3	30.7	4.6	145.5	14.2
Group IV	Births	20	52	102	372	7,919	157	8,622
(Less than 100 Deaths births per yr.)  Neonata Death R	Neonatal Deaths	16	22	29	17	47	7	129
	Neonatal Death Rate per 1000 L. B.	800.0	423.1	196.1	45.7	5.9	44.6	15.0
	Births	50	72	141	675	11,770	450	13,158
Group V Uncoded	Neonatal Deaths	37	19	22	16	75	21	190
Hospitals	Nconatal Death Rate per 1000 L. B.	740.0	263.9	156.0	23.7	6.4	46.7	14.4
	Births	48	122	242	1,110	18,737	1,432	21,691
Home Neonatal Deaths		28	42	37	42	152	55	356
Deliveries	Neonatal Death Rate per 1000 L. B.	583.3	344.3	152.9	37.8	8.1	38.4	16.4
Totals	Births	761	1,136	2,334	8,564	148,673	3,761	165,229
(All	Deaths Neonatal	478	470	336	285	775	254	2,598
Deliveries) 1958 thru 1961	Neonatal Death Rate per 1000 L. B.	628.1	413.7	144.0	33.3	5.2	67.5	15.7

Source: Bureau of Vital Statistics, Arkansas State Board of Health

small figures, the variability in completeness of reporting, and the tendency for problem cases to be referred to large medical centers all must be considered.

Arkansas births and neonatal deaths for 1958 through 1961 were tabulated by birth weight and by hospital of birth according to the method of Shackelford et al.<sup>2</sup> Hospitals were grouped according to the number of births per year as follows:

Group I-1000 plus births per year; Group II-500 to 999 births per year; Group III-100 to 499 births per year; Group IV-less than 100 births per year; Group V-Uncoded Hospitals; and Home Deliveries. Births and corresponding neonatal deaths were subdivided according to birth weight for each group of hospitals and for home deliveries. The result of this tabulation is Table II. A similar tabulation was published for

the year 1958.<sup>3</sup> The tabulation for the four year period is similar to the one for the single year. In both tabulations the Group I hospitals (1000 plus births per year) had the highest neonatal death rate, with home deliveries having the second highest rate. For 1958 alone, Group II hospitals had a rate equal to that for home deliveries. In both tabulations neonatal death rates for infants weighing 5# 8oz. or less at birth were roughly comparable for each of the groupings according to place of delivery. In both tabulations infants with a birth weight of 5# 9 oz. or better had a higher neonatal death rate if they were delivered at home rather than in a hospital. In reviewing this data the size of the subgroups, the effect of

referral of problem cases to larger hospitals, and variability in reporting must be considered. With this in mind, hospitals can compare their data on births and neonatal deaths with data for the corresponding hospital group.

- 1. Vital Statistics of the United States, 1959, Section II General Natality and Mortality by counties, Urban and Rural Areas, and Specified Urban Places. Tables 25 and 26, United States Department of Health Education Welfare, National Office of Vital Statistics.
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#### Studies of Myocardial Actomyosin and Myosin After Shock, Acute Hemorrhage, Acute Hypoxia and Cardiopulmonary Bypass

Y. W. Cho, P. M. Galletti, and L. Nelson, *Circulation* 27:748 (April [pt 2]) 1963

A decrease in cardiac efficiency was observed in experimental dogs subjected to acute endotoxin shock, acute hemorrhage, and complete heartlung bypass procedures. Since the myocardial mechanical efficiency greatly depends, among other things, upon the integrity of the contractile proteins, actomyosin were extracted from the heart muscle of experimental and control animals with Guba-Straub solution. The viscosity of the extracts before and after addition of adenosinetriphosphate (ATP) was measured. The myosin-ATP-ase activity was also determined. The findings suggested that the cardiac myosin-ATP-ase is decreased in all experimental groups including dogs in acute hypoxia; the actin appears to be altered in all except the acute hypoxia group. These changes of actomyosin and myosin may interfere with energy utilization by the contractile system and thereby affect the cardiac efficiency.

#### The Gastric Mucosa in Tropical Sprue

M. H. Floch, R. W. Thomassen, R. S. Cox and T. W. Sheehy, *Gastroenterology* 44:567 (May) 1963

Thirty Puerto Rican patients with tropical sprue were evaluated for gastric function and gastric mucosal abnormalities. The results were correlated with small intestine function and histological studies. Twenty (67%) of the patients demonstrated a gastric lesion. Six had simple gastritis and 14 (47%) had atrophic gastritis on biopsy specimens. The gastric mucosal lesions correlated well with gastric acidity and uropepsin secretion, but correlation with cyanocobalamin (vitamin  $B_{12}$ ) absorption was not possible because of the intestinal lesion of sprue. Age, anemia, xylose absorption, serum carotene, vitamin A absorption, fecal fat excretion, jejunal lesions, and small bowel x-ray studies revealed no correlation with the type or severity of the gastric mucosal lesion. Serial biopsies over a one-year period revealed no change in the lesion after complete hematologic and clinical remission of the tropical sprue. The significance and possible etiologies of the gastritis in tropical sprue are discussed.



# CLINICAL CORRELATION WITH THE SCHLESINGER TECHNIQUE

By Alfred Kahn, Jr., M.D.

L HERE ARE STILL GAPS IN OUR knowledge about the hemodynamics of circulatory deficiency. This subject has been studied in human hearts removed at postmortem and studied by the Schlesinger technique by Allison, Rodriguez, Higgins, Litty, Ablemann, Ellis and Robbins (Circulation, Vol. 18, p. 170, February, 1963). The Schlesinger technique consists of injecting each coronary artery with a different colored radio-opaque mass consisting of barium sulfate, color dye and geletin; after the menstruum sets, the heart is unrolled, x-rayed and dissected. The x-ray and anatomic findings are carefully correlated. Allison et al. report that this technique will show the pattern of coronary vessels, anastimoses greater than 40 microns, and the relationship between ischemic damage and coronary narrowing.

430 subjects were studied and they were classified from their clinical records as to the type of coronary artery disease. The disected hearts were also graded as to the severity of the coronary atherosclerosis as to weight and myocardial disease. These two sets of data were then correlated.

In the general discussion of their work, the authors were struck by the very high incidence of coronary heart disease, and they felt that ordinary post-mortem studies underestimated the extent of coronary disease, and for that matter, so did clinical studies. A number of the hearts showed hypertrophy in response to coronary artery sclerosis alone. These investigators found intercoronary artery anastimoses in 10% of the normal hearts which they studied; anastimoses were present in 99% of the hearts with coronary artery occlusions. Both hypertrophy and intercoronary artery communications seem to be compensatory mechanisms.

In discussing the state of compensation, Allison

et al. found up to 50% of the cases of coronary artery sclerosis had chronic congestive heart failure. Angina pectoris, interestingly, did not imply more serious coronary artery disease than was present in patients without angina pectoris. The overall incidence of angina, the authors report as 9.5% and most of these cases had coronary artery occlusions or myocardial infarctions.

The statistics from this study are very interesting. Coronary artery occlusion without infarction occured in 6.4% of coronary artery occlusion cases. On the other hand, myocardial infarction without coronary occlusion occured in 27% of the cases of infarction. A definite clinical diagnosis of myocardial infarction was substantiated in 85% of the cases, but false negative cases of suspected coronary heart disease varied from 46% in myocardial infarction in 31% in severe coronary artery disease. It is of some note that coronary artery disease is uncommon in cirrhotics.

This series also showed that women and youth have some protection against coronary artery disease.

Of all the statistics available to this reader, the most interesting is the high incidence of false negative diagnoses. If a patient complains of a coronary like disorder, and no corroborative evidence is found, there is almost a 50% chance that the physician may be in error if the disorder is a coronary artery occlusion; this does not mean that this incidence is this high in ordinary clinical practice, but in the cases available for post-mortem in this series, such was the case. A high index of suspicion is often necessary to make a diagnosis of coronary artery disease, but it should be weighed against the great damage an erroneous diagnosis of coronary artery disease does to the patient's income, personal relations, planning-and in fact, total life situation.



#### Chief Medical Director of VA Announced

Major General Joseph H. McNinch, Medical Corps, U. S. Army (Retired), became Chief Medical Director of the Veterans Administration on June 1st.

General McNinch has been Director of Research for the American Hospital Association since his retirement from the Army in April, 1962. He had previously been Commanding General, U. S. Army Research and Development Command. He went from that post to Chief Surgeon for the U. S. Army in Europe in August, 1960 and served in that capacity until he retired.

General McNinch was born October 5, 1904, in Indianapolis, Indiana, where he attended grade and high schools. In 1927 he received his bachelor of arts degree and in 1930 an M.D. degree from Ohio State University. He completed the Army Medical School's post graduate course and the Medical Field Service School. In 1951 he received the master of public health degree given by Johns Hopkins University. Shortly after receiving his medical degree he joined the Army Medical Reserve as a first lieutenant. Some of his major assignments have been: Deputy Surgeon of the United Kingdom base in the European Theater, London (1944): Director of the Army Medical, Library, now the National Library of Medicine, (1947-1949): Commander of the Environmental Health Laboratory, Edgewood, Md., (1954-1955); and Chief of the Personnel Division, Army Surgeon General's office (1955-1957). He was editor of the History of the Medical Department in World War II.

#### **Doctor Collins now on Staff of FC Clinic**

Dr. E. Morgan Collins Jr., son of Mr. and Mrs. E. M. Collins, Highway 1 South, now is associated with Forrest City Clinic on Lindauer Road, said Dr. George T. McPhail.

A 1951 graduate of Forrest City High School, Doctor Collins studied at Oklahoma State University, Stillwater, and the University of Arkansas School of Medicine, Little Rock. He interned at St. Vincent's Infirmary, Little Rock.

After completing his internship, he was with the Public Health Service for two years in Arizona, where he worked with the Navajo and Quechan Indian tribes. He practiced at Clarendon for the past year before deciding to return to Forrest City.

#### Medical Librarians to Washingon

Little Rock was represented by six of its eight medical librarians at the International Congress of the Medical Library Association, held June 16-22, 1963, at the Shoreham in Washington, D. C. Delegates to the convention included the following librarians: Miss Marie Harvin, librarian at University of Arkansas Medical Center, who is the new national chairman of Committee on Standards; Miss Kay Jenkins, Miss Rose Hogan, and Mrs. Esther Schultz—all of the UAMC: Sister Mary Helen of St. Vincent Infirmary, and Mrs. Ruth Arnold Leveck of the Arkansas Baptist Hospital, who helped the local committee with overseas librarians by speaking French.

The theme of the convention is; "Libraries in the Advancement of Medicine." This deconnial session was aimed at improving libraries all over the world.

#### Women in Medicine

While much attention has been given to the physician shortage in relation to the population boom, and to the need to maintain a reservoir of highly qualified medical school applicants, information on the woman in medicine has infrequently been made available. We seldom consider how this "one-half of our population" might help meet the medical needs of our changing times. This Datagram offers a summary showing how women are faring in their efforts to gain admission to medical school and to the medical profession. The information presented here includes Medical College Admission Test scores, accep-

tance data, and figures comparing undergraduate and medical degrees.

Medical College Admission Test Data: Over the past ten years there has been relatively little fluctuation in average MCAT scores of either accepted or nonaccepted applicants. However, Table 1, which is typical, shows that women tend to score significantly higher in Verbal Ability than their male counterparts and, in turn, relatively lower in Quantitative Ability, and Science Achievement. This basic profile of verbal and quantitative aptitudes has previously been demonstrated for the male and female population in general.

TABLE 1

Comparison of MCAT Scores of Men and Women Applicants, 1960-61 and 1961-62

1960-61

MCAT Subte t Verbal Ability	Accepted 525	MEN Not Accepted 463	Total 501	Accepted 553	WOMEN Not Accepted 480	Total 524	Accepted 527	TOTAL Not Accepted 464	Total 503
Quantitative Ability	535	455	503	510	424	476	533	453	501
Modern Society	527	474	506	520	461	497	527	473	506
Science Achievement	535	450	502	518	435	485	533	449	500
				1961-62					
Verbal Ability	531	466	506	554	505	537	533	469	509
Quantitative Ability	541	467	512	512	447	490	538	469	509
Modern Society	523	469	502	507	462	491	522	469	501
Science Achievement	539	459	508	520	446	494	537	458	507

<sup>\*</sup>Submitted by the Division of Education. Sources of information will be furnished upon request.

Acceptance Data: Over the last thirty years the percentage of women entering medical school compared to the total enrollment has increased from 4.5 per cent in 1929 to 8.5 per cent in 1961-62. The major part of this increase has occured since 1950-51. The percentage of women accepted from the total number of women apply-

ing has fluctuated over the years without any discernible trend. It can be concluded from Table 2, however, that while the number of male applications has remained relatively stable (with the exception of the period immediately following the war years), the number of female applications has gradually increased through the time span considered.

TABLE 2
Acceptance Data on Men and Women Applicants for Selected Years\*

		MEN			WOMEN				
Year	Number Applicants	Number Accepted	Per Cent Accepted	Number Applicants	Number Accepted	Per Cent Accepted	Per Cent of Total Accepted		
1929-30	13,174	6,720	51.0	481	315	65.5	4.5		
1935-36	12,051	6,521	54,1	689	379	55.0	5.5		
1940-41	11,269	6,025	53.5	585	303	51.8	4.8		
1950-51	21.049	6,869	32.6	1,231	385	31.3	5.3		
1955-56	13,935	7,465	53.6	1,002	504	50.3	6.3		
1960-61	13,353	7,960	59.6	1,044	600	57.5	7.0		
1961-62	13,215	7,946	60.1	1,166	736	63.2	8.5		

<sup>\*</sup>Data is presented at five year intervals where available.

Comparison of Women Receiving Baccalaureate and M.D. Degrees: The total number of medical degrees conferred, both to men and women, has increased only slightly over the past nine years compared to the increase in the total

number of bachelor's degrees awarded. While women have earned a relatively constant 35 per cent of all bachelor's degrees over the past nine years, the percentage of women receiving M.D. degrees from U. S. medical schools remains

at approximately five per cent of the total number of M.D. degrees granted. It is evident, therefore, that in light of the increased demand for higher education, women tend to be relatively better

represented in the undergraduate school than in medical school.

By comparison, the percentage of all women medical school graduates in Canada is 12 per cent and in Great Britain 24 per cent.

TABLE 3

Comparison of Baccalaureate and M.D. Degrees

Awarded to Men and Women, 1953-1961

Earned Degrees Conferred by Sex Bachelor's (and first professional) \*

Medical School Graduates by Sex

Year	Men	Women	Per Cent of Women of Total	Men	Women	Per Cent of Women of Total
1952-53	200,820	104,037	34.1	6,237	363	5.5
1953-54	187,500	105,380	36.0	6,563	360	5.2
1954-55	183,602	103,799	36.1	6,696	345	4.9
1955-56	199,571	111,727	35.9	6,504	341	5.0
1956-57	222,738	117,609	34.6	6,466	330	4.8
1957-58	242,948	122,800	33.6	6,506	355	5.2
1958-59	254,868	130,283	33.8	6,490	370	5.4
1959-60	255,504	139,385	35.3	6,676	405	5.7
1960-61	255,900	145,884	36.3	6,640	354	5.0

<sup>\*</sup>Including M.D.'s

### THE MONTH IN WASHINGTON

Washington, D.C.—Chairman Wilbur D. Mills (D., Ark.) of the House Ways and Means Committee has made clear that he still opposes the Kennedy Administration's legislation that would provide social security hospitalization for aged persons.

Mills said he did not intend to permit a social security bill he introduced to be used as a vehicle for Congressional action on any version of President Kennedy's disputed program.

The Mills bill would make the first \$5,400 in annual earnings subject to the social security tax. It is \$4,800 now. Kennedy's social security hospitalization bill would increase the tax base to \$5,200.

The objective of the Mills bill is to strengthen the social security trust fund's financing by eliminating most of the long-range deficit now in prospect.

"My only intention in introducing the bill is to get the fund on an actuarially sound basis and to call attention to the fact that it is not actuarially sound now," Mills said.

"I assume everybody knows that I do not support the enactment of medicare under the social security program.

Another Democrat on the Ways and Means Committee, Rep. A. Sidney Herlong, Jr. of

Florida, also expressed strong opposition recently to the Kennedy legislation, known as the King-Anderson bill, or any other plan to finance health care through social security.

This position by Mills and Herlong made it unlikely that the Ways and Means Committee, where such legislation normally is acted upon first in Congress, would approve any health care plan financed through social security.

However, supporters of the King-Anderson bill could try to attach it as a rider to another social security bill on the Senate floor. This was the maneuver they attempted—unsuccessfully—last year.

\* \* \* \* \*

The Senate has approved the Kennedy Administration's \$848.5 million mental health bill by a vote of 72 to 1. Its sponsors were confident of House passage also.

The American Medical Association had testified in support of the legislation when it was before the Senate Labor and Public Welfare Committee.

The bill would provide:

—A four-year program, costing \$230,000,000, under which Federal grants would go to states for construction of public or other nonprofit community mental health centers. Funds would be allocated on the basis of population and need.

—An eight-year program, costing \$427,000,000, of Federal grants to states for staffing of these mental health centers. Federal aid would gradually decrease and eventually would be cut off.

-A five-year program, costing \$30,000,000, of Federal grants to public or other nonprofit institutions for construction of research centers and facilities for the mentally retarded.

—A five-year program, costing \$42,500,000,of Federal grants for constructing college or university facilities to offer services to the mentally retarded and training for persons dealing with the retarded.

—A four-year program, costing \$67,500,000, of Federal grants to states for constructing facilities for the mentally retarded. Funds would be allocated on the basis of population and need.

—A three-year program, costing \$45,500,000, for training of teachers of the mentally retarded, deaf, emotionally disturbed, crippled and other handicapped children.

—A three-year program of research and demonstration projects in education of the handicapped.

The National Cancer Institute says that research strongly suggests viruses cause cancers in humans.

Reviewing medical research in the past year before a House budget subcommittee, a National Institute of Health official said:

"The scientific evidence accumulated over a number of years, and particularly in the last half-dozen years, has demonstrated that viruses cause many forms of cancer in animals under experimental conditions. . . .

"The large volume of such evidence, coming from a wide variety of scientific disciplines, is so strongly suggestive of a virus-cancer relationship in man that the National Cancer Institute has given active encouragement to research in this area. To date, no human cancer-causing virus has been found. However, we know for example of a group of human viruses that have not yet been linked with specific disease, and some animal viruses that cause bizarre changes in human cells growing in tissue culture. . . .

"The present state of knowledge leaves no doubt in our minds that viruses must be studied not only as a single possible cause of cancer in man, but in the whole context of carcinogenesis. The possible interaction of substances in the total environment—such as radiation, chemicals, and

viruses—in giving rise to cancer in the population must be taken into account. Already there is laboratory evidence that this can occur in animals."

Dr. Kenneth M. Endicott, Director of the National Cancer Institute, told the subcommittee that "there is no doubt left in my mind that there is very strong association between excessive smoking and high incidence of cancer of the lung."

Endicott said it appeared people would persist in smoking despite medical findings and legislative action. For this reason, Endicott said, research is being conducted to eliminate any cancer-causing factors or to counter them by adding chemicals.

"I think one of the really fascinating problems, a social problem more than a medical one, is what do you do about a situation of this kind?" the physician said.

The Public Health Service Surgeon General's Committee on Smoking and Health delayed until early next year a report dealing with smoking and health evidence. The group originally was supposed to have issued its initial report by this summer but the members found they could not accomplish the research at this time.



## Hahnemann Medical College and Hospital To Have Post-Graduate Course

Hahnemann Medical College and Hospital will sponsor a post-graduate course (10th Symposium "Aging of the Lung: Perspectives")—Sheriton Hotel, Philadelphia, Pa. November 18-20, 1963.

The primary purpose of this meeting is to consider recent developments in the biochemistry, morphology and physiology of aging as it relates to the lung. The formal presentations will thus serve as a basis, not only to summarize the present status, but also to delineate unsolved problems.

### Annual Meeting of the MLA to be in Little Rock

The program for the thirteenth annual meeting of the MLA Association, Southern Regional Group will feature Robert Austin, for many years

at the National Library of Medicine, Washington, DC, and now at Washington University Medical Center, St. Louis—as banquet speaker. The conference will be held Oct. 25-26, 1963 at Little Rock, Arkansas, the University of Arkansas Medical Center serving as host.

Approximately seventy medical librarians from universities, VA hospitals, private hospitals, government agencies, and state and local societies are expected. The Southern Regional Group includes the states of North Carolina, South Carolina, Florida, Georgia, Alabama, Mississippi, Louisiana, Texas, New Mexico, Arkansas, Tennessee, Kentucky, and Oklahoma.

The following Little Rock librarians will serve as committee chairmen:

Program, Miss Marie Harvin, UAMC; Registration, Miss Kay Jenkins, UAMC; Activities, Miss Camilla Sharp, Arkansas Graduate Institute of Technology; Hospitality, Miss Rose Hogan, UAMC; Publicity, Mrs. Ruth Arnold Leveck, Arkansas Baptist Hospital.

The program includes a report on the interlibrary loan survey now under way in all university medical libraries in the region, given by Mrs. Elizabeth J. Eaton, J. Hillis Miller Medical Library, University of Florida, Gainesville, Florida.

ANSWER-What is Your Diagnosis?

15-68-92 21 year old white male

DIAGNOSIS: Coarctation of the aorta

X-RAY FEATURES: There is slight left ventricular enlargement. The aortic knob is small and as the lateral border of the aorta is traced a distinct notch is detected. An impression on the barium filled esophagus is also seen below the notch in the aorta representing post-stenotic dilatation. Distinct rib notching is noted, most marked in the seventh and eighth ribs on the left.

The roentgen findings are characteristic of the aorta.

HISTORY: This young Air Force man was apparently well at the time this film was made. A heart murmur had been discovered four months before on routine physical examination.

Mrs. Mildred C. Langner, Librarian, University of Miami, School of Medicine, Miami, Florida, will moderate a discussion on the Medlars product, the use of the new Medical Subject Headings from the National Library of Medicine and Index Medicus.

Social get-togethers will be held at the Albert Pike Hotel, guests of the University of Arkansas Medical Center; and at the Top of the Rock Club, guests of the J. A. Majors Company.



### Dr. Jones Dies At Age 66

Doctor H. Fay H. Jones, urologist in Little Rock since 1918, died May 23, 1963 of a heart attack in a Little Rock hospital. He was 66 and had been a member of the Pulaski County Medical Society for 45 years. Dr. Jones was a former president of the Pulaski County Medical Society of the Arkansas Medical Society and of the Little Rock Rotary Club.

### ANSWER-Electrocardiogram of the Month

AGE: 58 SEX: M BUILD: SLENDER

BLOOD PRESSURE: 140/50/20

MEDICATION: None

HISTORY: Aortic insufficiency, left ventricular hypertrophy first discovered in 1956. Increasing dyspnea on exertion.

RATE: 58 RHYTHM: Sinus

PR: .36 sec. QRX: .10 sec. QT: .40 sec.

INTERPRETATION: Abnormal. Incomplete A-V block. Left ventricular hypertrophy. Possible residuals old anteroseptal infarction.

COMMENT: This patient was considered to have rheumatic heart disease with aortic insufficiency. although he also had rheumatoid arthritis, which may be associated with aortic insufficiency of a different type. There was a history of rheumatic fever, however, and the prolonged P-R interval probably was confirmatory.



### RESOLUTION

WHEREAS, the recent passing of Dr. Doyle Fulmer, a member of the Pulaski County Medical Society for more than twenty-five years, is hereby noted with sorrow by his colleagues, and

WHEREAS, Dr. Fulmer made an outstanding contribution to the community in his practice and was held in high esteem by his fellow physicians, his patients and his friends, and

WHEREAS, Dr. Fulmer, a recipient of the Purple Heart, served his country during time of war with courage and distinction, and

WHEREAS, he served faithfully as a member of his church,

BE IT THEREFORE RESOLVED, That the members of the Pulaski County Medical Society express their regret at his passing, and

That we extend our deepest sympathy to his family, and

That we shall forward a copy of this resolution to his family, and

That we shall incorporate this resolution in the minutes of the Society, and

That we shall cause the resolution to be published in the Journal of the Arkansas Medical Society.

By Action of the Memorials Committee Pulaski County Medical Society John E. Greutter, M.D., Chairman

Read and Approved, June 4, 1963

### **RESOLUTION**

WHEREAS, the untimely death of one of the most highly esteemed members of the Pulaski County Medical Society, Dr. H. Fay H. Jones, has caused his fellow physicians to be deeply sorrowed and

WHEREAS, Dr. Jones, a former president of the Pulaski County Medical Society and of the Arkansas Medical Society, has served the cause of organized medicine untiringly and

WHEREAS, Dr. Jones was held in high regard

by the citizens of this county and state, by his patients and by his associates and

WHEREAS, he has served faithfully as a member of his church and of his community,

BE IT THEREFORE RESOLVED, by the Pulaski County Medical Society, of which Dr. Jones was a member for 45 years, that we are sorrowed by his departure,

That we express our deepest sympathy to his wife, his children and his many friends,

That a copy of this resolution be forwarded to his family,

That this resolution be made a part of the permanent records of the Society, and

That we shall cause this resolution to be published in the Journal of the Arkansas Medical Society.

By Action of the Memorials Committee Pulaski County Medical Society, John E. Greutter, M.D., Chairman.

### **RESOLUTION**

BE IT RESOLVED, that the Johnson County Society express its sorrow over the loss of its highly esteemed member, Doctor George Reginald Siegel.

Dedicated to the pursuit of life's noblest objectives, Doctor Siegel's endeavors in the service of mankind, both in the medical profession and as an outstanding community and civic leader, reflect his manner of purpose and the depth of his altruism. His steadfast service will be sadly missed and long remembered by his colleagues, patients, friends, and the citizens of his community.

BE IT FURTHER RESOLVED, that a copy of this resolution be sent to his daughter, and further that the resolution be spread upon the minutes of this Society, and a copy furnished to the Arkansas Medical Society.

Guy Shrigley, M.D.
R. H. Manley, M.D.
Resolution Committee



### PERSONAL AND NEWS ITEMS

## Dr. Jones Presented 25-Year Plaque At Public Health Meet

Dr. Lynwood B. Jones, director of the Phillips County Health Unit, was presented a Twenty-five Year Plaque at the 15th annual meeting of the Arkansas Public Health Association in Little Rock.

### Dr. Mobley Gives Commencement Speech

Dr. Jack E. Mobley, Morrilton physician and member of the Board of Education, gave the address at the Commencement Exercises for the 96-member Graduating Class at Morrilton High School.

### Sisters Mary Austin And Mary Grace Attend Medical Society Meeting

Sister Mary Austin and Sister Mary Grace of St. Mary's Hospital, Dermott, Arkansas, attended a meeting of the Arkansas Society of Inhalation Therapists held at St. Michael's Hospital, Texarkana, May 11.

H. B. Wren, Jr., M.D. of Texarkana lectured on the use of inhalation therapy in post-operative care.

## Little Rock Doctor Speaks To Jackson County Medical Assistants Society

Dr. Grimsley Graham, of Little Rock, spoke at the May meeting of the Jackson County Medical Assistants Society. The meeting was held at the Newport County Club and commemorated the second anniversary of the organization.

### School of Pharmacy and Nursing Elect Officers

The schools of Pharmacy and Nursing at the University of Arkansas Medical Center have elected officers to serve during the 1963-64 school year.

Miss Betty Jane Leggett, Little Rock, will serve as president of the School of Nursing. Miss Suellen Rolniak, West Fork, Ark., will be nursing editor of the Caduceus, the Medical Center student annual.

Carl Collier, of Fayetteville, is the newly elected president of the School of Pharmacy. Other

Pharmacy officers are: Bruce Junkin, North Little Rock, vice president; Miss Phoebe Brown, of Gravette, secretary, and Jerry Moody, Mountain View, treasurer.

### **Group Attends APHA Meeting**

The Arkansas Public Health Association held its 15th annual meeting in Little Rock May 21-22 with about 700 representatives of all phases of public health activities in attendance. An outstanding feature of the meeting was the keynote address on Community Health Services by Dr. Thomas R. Hood, Deputy Executive Director of the American Public Health Association.

### Dr. Cooper Renamed UCMSA President

Dr. James O. Cooper was re-elected president of the Union County Medical Scholarship Association at a regular meeting of the group at the El Dorado Golf and Country Club. Other officers re-elected are Dr. Berry Moore, vice president; Arlen Waldrup, treasurer; and Hugh R. Smith, secretary. J. A. O'Conner, Jr., Dr. C. E. Tommey and Dr. Moore were re-elected to the board of directors. Other members of the board are Dr. A. R. Clowney and Dr. R. L. Turnbow.

### Stuttgart Physician Member of AMA 50-Year Club

Dr. S. A. Drennen, veteran 73-year-old Stuttgart physician, has joined the ranks of the "Fifty Year Club of American Medicine"—an honorary affiliate of the American Medical Society.

Born in Newark, Arkansas in 1889, Dr. Drennen received his medical degree in 1913, practiced two years at Batesville, two years at Rush and spent two years in the U. S. Army Medical Corps during World War I, before moving to Stuttgart in 1919. He is a member of the First Christian Church; a past mayor of the city and a former president of the Arkansas Medical Society.

## Greenwood Doctor Honored At Appreciation Banquet

Greenwood Citizens, over 200 strong, surprised their "Doc" at an appreciation banquet recently.

The event was held to honor Dr. Charles W. Bailey, who is completing 10 years of service to his home town and the surrounding area. Dr. James Burgess and Sidney Gene Richards served as masters of ceremony during the program. Dr. Clarence Glenn of Fort Smith, who attended medical school with Dr. Bailey, was the guest speaker.

## Contributors To The American Medical Association Education and Research Foundation April 1963

Dr. Martha M. Brown, State Hospital, Little Rock \$10.00
Dr. Eldon L. Caffery, 812 Cobb, Jonesboro
Dr. Paul U. Ducommon, Box 5878, Camden 50.00
Dr. Alfred H. Hathcock, 377 East Main, Batesville 10.00
Dr. Ruth E. Lesh, 221 North College, Fayetteville 10.00
Dr. Ping C. Ling, St. Edward's Hospital, Fort Smith 25.00
Dr. Wm. S. Orr, Jr., Donaghey Building, Little Rock 25.00
Dr. J. P. Price, Jr., Monticello 25.00
Dr. Warren Riley, 415 13th Street, El Dorado 6.00
Dr. Francis J. Scully, 236 Central, Hot Springs 5.00
Dr. Friedman Sisco, Springdale 25.00
Dr. Floyd A. Smith, Jr., Trumann 10.00
Dr. Charles Weber, Magnolia 3.00
Dr. W. W. Workman, 4900 Glenmere Road, North
Little Rock 10.00
Dr. John C. Wright, Newport
Dr. David Yocum, El Dorado 10.00
Clark County Woman's Auxiliary 66.00
Craighead-Poinsett County Woman's Auxiliary 25.00
Jefferson County Woman's Auxiliary 12.00
Lawrence County Woman's Auxiliary 12.00
Union County Woman's Auxiliary 15.00
Washington County Women's Auxiliary 10.00
White County Woman's Auxiliary 5.00
Mrs. H. W. Thomas, Dermott 1.00
Lee K. Hermann, 108 Iowa Circle, Jacksonville 5.00

## Contributors To The American Medical Association Education and Research Foundation May 1963 Dr. George W. Allen, 320 N. Greenwood, Ft. Smith... \$ 25.00

\$420.00

Dr. George W. Mien, 320 W. Greenwood, Ft. Shiren	40.00
Dr. B. P. Briggs, 1417 West 6th, Little Rock	12.50
Dr. Wm. G. Cooper, Jr., Donaghey Bldg., Little Rock	10.00
Dr. Milton D. Deneke, West Memphis	25.00
Dr. Wm. T. Dungan, 1417 West 6th, Little Rock	12.50
Dr. Hugh R. Edwards, Searcy	100.00
Dr. Eldon Fairley, Osceola	100,00
Dr. Julian Fairley, Osceola	100.00
Dr. John C. Faris, Jonesboro	10.00
Dr. Thomas M. Ferguson, West Memphis	25.00
Dr. George J. Fotioo, 236 Central, Hot Springs	10.00
Dr. Lowell Harris, Hope	10.00
Dr. C. Lynn Harris, Hope	10.00
Dr. Willie J. Lee, Stamps	10.00
Dr. J. S. McKinney, 514 West Faulkner, El Dorado	25.00
Dr. J. H. McCurry, Cash	25.00
Dr. George Regnier, 5123 Crestwood, Little Rock	10.00
Dr. Joseph L. Rosenzweig,	
236 Woodbine, Hot Springs	20.00
Dr. Joseph P. Ward, 19 Pinnacle Drive, Little Rock	10.00
Mrs. R. H. Atkinson, Hot Springs	1.00
James H. Bearden, Little Rock	5.00
Mrs. M. Blanton, Jonesboro	1.00
, J	- •

Harold H. Chakales, Little Rock	10.00
Mississippi County Medical Auxiliary	396.29
Pulaski County Medical Auxiliary	258.63
Arkansas County Medical Auxiliary	1.00

\$1,222.92



DR. M. R. SPRINGER, JR. is a new member of Garland County Medical Society. A native of Tulsa, Oklahoma, he received his preliminary education from Tulane University. His M.D. degree was received from the University of Arkansas Medical Center in 1957. His office is now at 501 Medical Arts Building in Hot Springs, Arkansas. Dr. Springer's specialty in radiology.

A new member of Pulaski County Medical Society is DR. WALTER R. OGLESBY. A native Arkansan, his pre-medical education was received from Arkansas A & M College. In 1958, his M.D. degree was received from the University of Arkansas School of Medicine. Dr. Oglesby is a general practitioner with his office at 5302 New Conway Highway, North Little Rock, Arkansas.

DR. ALEX S. Y. GO is a new member of St. Francis County Medical Society. A native of Canton, China, he attended Tulane University in New Orleans and received his M.D. degree from there in 1961. Dr. Go is a general practitioner with his office at Hughes Clinic in Hughes, Arkansas.

Sebastian County Medical Society announces that DR. EDW1N L. COFFMAN has been added to its roster of members. He is a native of Paris, Arkansas, and his pre-medical education was obtained at Hendrix College in Conway. His M.D. degree was received from the University of Arkansas Medical School in 1957. His office is now located at 1500 Dodson Avenue in Fort Smith, Arkansas. He is an anesthesiologist.

A new member of Sebastian County Medical Society is DR. JOHN C. WATTS, JR. A native of Camden, Arkansas, his pre-medical education was obtained from the University of Arkansas. In 1956, his M.D. degree was received from Tulane University in New Orleans, Louisiana. Dr. Watts has his office at 1400 South D Street in Fort Smith. He is a pediatrician.

DR. BYRON L. BROWN is a new member of Sebastian County Medical Society. Born at Hastings, Nebraska, his preliminary education was received from Hastings College. His M.D. degree was received from the University of Nebraska College of Medicine in 1946. His specialty is orthopedics. Dr. Brown's office is at 300

\* \* \* \*

North Greenwood in Fort Smith.

Pulaski County Medical Society announces that DR. SAMUEL T. JONES is a new member of their society. A native of Birmingham, Alabama, he received his pre-medical education at Tulane University. His M.D. degree was received from Tulane University School of Medicine in 1950. Dr. Jones' specialty is ophthalmology and his office is located at 4301 West Markham in Little Rock.

\* \* \* \*

A new member of Clark County Medical Society is DR. R. H. NUNNALLY. His pre-medical education was received from Tulane University and his M.D. degree was received from the University of Arkansas School of Medicine in 1958. Dr. Nunnally practiced in Texas from 1958 until 1963. His office is now at Sparkman Clinic in Sparkman, Arkansas. He is a general practitioner.

DR. CLARENCE R. LOVELL is a new member of Garland County Medical Society. A native of Horatio, Arkansas, his pre-medical education was obtained from Southern State College at Magnolia. In 1961 his M.D. degree was received from the University of Arkansas School of Medicine. Dr. Lovell has entered into general practice at the DeQueen Clinic in DeQueen, Arkansas.

\* \* \* \*

DR. JOHN W. WIDEMAN is a new member of Sebastian County Medical Society. A native of Homer, Louisiana, his pre-medical education was obtained from Centenary College of Louisiana in Shreveport, Louisiana. In 1955, his M.D. degree was received from Louisiana State University

School of Medicine. He practiced at Confederate Memorial Medical Center from 1959 until 1963. Dr. Wideman's office is now at 300 North Greenwood, Fort Smith, and his specialty is orthopedic surgery.

\* \* \* \*

Sebastian County Medical Society announces that DR. JAMES R. SNIDER is a new member. He is a native of Pawnee, Oklahoma, and his preliminary education was received from the University of Oklahoma at Norman. His M.D. degree was received in 1956 from the University of Oklahoma School of Medicine. Dr. Snider has his office at 1500 Dodson, Fort Smith. His specialty is radiology.

\* \* \* \*

A new member of Sebastian County Medical Society is DR. JOE MASON. Born at Alma, Arkansas, his preliminary education was received from the University of Arkansas. His M.D. degree was received from the University of Arkansas School of Medicine in 1958. From 1958 until 1962 he practiced at Tulsa, Oklahoma. His office is at 807 South Greenwood, Fort Smith. Dr. Mason's specialty is obstetrics-gynecology.

\* \* \* \*

Sebastian County Medical Society announces that DR. PAUL L. ROGERS has been added to its roster of members. He is a native of Port Arthur, Texas, and his pre-medical education was received from Centenary College in Shreveport, La. In 1958, his M.D. degree was obtained from the Louisiana State University Medical School in New Orleans, Louisiana. He practiced at Confederate Memorial Hospital in Shreveport, La., from 1958 until 1962. Dr. Rogers' specialty is radiology and his office is located at 318 North Greenwood Avenue in Fort Smith.

\* \* \* \*

DR. BRUCE E. FACUNDUS is a new member of the Logan County Medical Society. A native of Monroe, Louisiana, he received his pre-medical education at Louisiana Tech in Ruston, Louisiana. In 1954, he received his M.D. degree from LSU School of Medicine in New Orleans. Dr. Facundus served with the U. S. Air Force from 1954 until 1958; practiced in Tampa, Florida, from 1958 until 1960; in Orlando, Florida, from 1960 until 1962, and he was in the U. S. Army in 1962. He now has his office at 210 Ellsworth in Booneville, Arkansas. Dr. Facundus is a general practitioner and general surgeon.

Garland County Medical Society announces that DR. CLAY A. SLOAN has been added to its roster of members. He is a native of Jonesboro, Arkansas, and received his preliminary education from the University of Arkansas. In 1945, his M.D. degree was received from the University of Arkansas Medical School. He practiced at Jonesboro from 1950 until 1957. Dr. Sloan is now medical director of Leo N. Levi Memorial Hospital in Hot Springs. His practice is limited to rheumatology.

A new member of Mississippi County Medical Society is DR. JOHN W. HARD. A native of Reevesville, Illinois, his pre-medical education was received from the University of Illinois and Washington University. In 1954, he received his M.D. degree from Washington University School of Medicine at St. Louis, Missouri. He practiced in Metropolis, Illinois, for six years. Dr. Hard's specialty is surgery and his office is at 527 North Sixth Street in Blytheville, Arkansas.



## Craighead-Poinsett Medical Auxiliary Officers Announced

Mrs. Glen Keller, president of the Woman's Auxiliary to the Arkansas Medical Society, installed the new officers for the Craighead-Poinsett Medical Auxiliary at the Jonesboro Country Club recently.

Officers of the two-county unit are Mrs. Durwood Wisdom, president; Mrs. William Bell, president-elect; Mrs. H. D. Alston, vice president; Mrs. Ernie Hogue, secretary, and Mrs. Orville Riggs, treasurer.

### Sebastian County Medical Society Auxiliary Officers Installed

New officers of Sebastian County Medical Society Auxiliary installed at a business meeting and luncheon at Sparks Manor are: Mrs. Neil E. Crow, secretary; Mrs. E. Z. Hornberger, president; Mrs. S. Z. Faier, treasurer; and Mrs. Ralph Downs, president-elect.

### Jefferson County Medical Society Auxiliary Announce Officers

Officers of the Women's Auxiliary to the Jefferson County Medical Society for 1963-64 are Mrs. William Joe James, vice president; Mrs. W. R. Meredith, president; Mrs. C. D. Burroughs, president-elect; Mrs. V. Bryan Perry, secretary; and Mrs. Clyde Tracy, treasurer; Mrs. A. E. Pollard, publicity; Mrs. Hunter Causey, historian; Mrs. R. E. Glasscock, parliamentarian and Dr. J. R. Pierce Jr., medical advisor.

### State Medical Auxiliary Workshop Held in Hope

The third District of the Arkansas Medical Auxiliary held a workshop in Hope at the First Presbyterian Church in May, with Mrs. Lynn Harris presiding. Mrs. Jim McKenzie was in charge of the registration, and Mrs. Forney Holt and Mrs. Jim Martindale served coffee. Local president, Mrs. Lowell Harris was in charge of the floral arrangements.

Mrs. Glen Keller, state president, addressed the group in the morning followed by a luncheon at the Heritage House.

### LETTERS



1450 Tower Building Little Rock, Arkansas June 4, 1963

Dr. Joe Verser, President Arkansas Medical Society Harrisburg, Arkansas

Dear Sir:

It has become increasingly evident to me from recent charges filed by the Arkansas State Medical Board that there is considerable confusion and misunderstanding among physicians generally as to the law governing dispensing of barbiturates and amphetamines by those physicians who dispense their own drugs. This letter is intended to clear up this confusion.

Both the Federal Law and the State Laws cover the dispensing of potentially harmful drugs. The Federal Food and Drug Act forbids the misbranding of potentially harmful drugs, which means the sale of these drugs except on a prescription of a legally practicing physician. The Federal Courts have very plainly held that where a physician dis-

penses these drugs, the act of dispensing the drugs must be to fulfill a medical need of a person who is an actual "patient" of the physician. The physician is not permitted to sell the drugs simply as a sale of drugs. The exemption afforded a physician is based upon the physician's actual acts in fulfilling and carrying out a physician-patient relationship. Your attention is specifically directed to the case of Brown v. U. S., 250 F. 2d, 745. A physician, Dr. Brown, was indicted for selling two truck drivers three separate lots of dextro-amphetamine hydrochloride tablets. Prior to dispensing the tablets to the purchasers, the physician had not prepared or given the purchasers any prescription, nor had he personally examined them, nor had he questioned them or "prescribed" a dosage or otherwise attempted to acquaint himself with the physical condition or medical needs of the purchasers. Dr. Brown was charged with violation of 21 U.S.C.A. sec. 353 (b) (1). Dr. Brown contended that the Food and Drug Act does not apply to the act of dispensing drugs by a licensed physician. The Circuit Court of Appeals held that the conviction was proper. It cited the language of the United States District Court in U. S. v. Amin Butros, Western District of Missouri, wherein the Court said in pronouncing sentence on a physician:

"Your error lies in the fact that, having a license to practice medicine, you have assumed that it was a license to peddle pills, and that is not the law. People came to you. Doctor, and without an examination or any prescription, just ordered pills and you would ask them, "Do you want the red or the yellow?"—and you just handed out the pills, these barbiturates and sex hormones, without any examination or prescription. You did that to those Government agents who came in there, not once but half a dozen times.

"Now, there seems to be some concept among the members of the medical profession that to have a license to deal in medicine carries a license to deal in barbiturates. That is not the law. The medical profession might just as well understand it. If I come to you for treatment and you, in your medical capacity examine me, and after examination determine that certain barbiturates would be beneficial to me, then you have a right to write a prescription to me, and then I have a right to get them and use them, but not otherwise." United States v. Amin Boutros, (D. C. W. D. Mo.) No. 19-304-Cr. Decided Dec. 23, 1955.

The Court then cited an excerpt from the United States Supreme Court decision of Webb v. United States, 249 U.S. 96, 63 L.Ed. 499, wherein the Supreme Court answered a certified question of the Sixth Circuit Court of Appeals as follows:

"3. If a practicing and registered physician issues an order for morphine to an habitual user thereof, the order not being issued by him in the course of professional treatment in the attempted cure of the habit, but being issued for the purpose of providing the user, with morphine sufficient to keep him comfortable by maintaining his customary use, is such order a physician's prescription under exception (b) of section 2?" Webb v. United States, 249 U. S. 96, 99, 39 S. Ct. 217, 218, 63 L. Ed. 479.

The answer, obvious it seems to any who consider the matter was:

"As to question three—to call such an order for the use of morphine a physician's prescription would be so plain a perversion of meaning that no discussion of the subject is required. That question should be answered in the negative." Webb v. United States, 249 U. S. 96, 100, 39 S. Ct. 217, 218.

The Court then says that whether there was a "prescription" depends upon whether there was bona fide relation-

ship of physician-patient.

The case of *DeFreese v. U. S.*, 270 F. 2d, 730 is also of interest. Dr. DeFreese was convicted of selling a Government agent 10,000 Benzedrine tablets. He contended that the Federal law applied only to the sales at the retail or pharmacy level. The Federal Appeals Court upheld his convictions, stating that the Federal act governed all sales and that the purchaser of the drugs was not a "patient" of Dr. DeFreese. The Court went further to say that while the Federal act referred to dispensing by a pharmacist, that "it has always been the rule that a physician who does his own dispensing is also acting in the capacity of a pharmacist.

The State of Arkansas has a Food and Drug Law (Arkansas Statutes 82-1115) which is similar to the Federal law as respects the misbranding of drugs. It should be borne in mind that the actual sale of the drugs is an act of misbranding, for which heavy penalties are assessed.

In addition, Arkansas has enacted what is commonly called the Arkansas Barbituric and Amphetamine Statute, which is Arkansas Statutes 82-956.1. This Act forbids any person to "prescribe or dispense" the drugs covered except in the course of such person's professional practice, only and except upon a personal contact of the person for whom or to whom such drugs are prescribed or dispensed, such personal contact to be made upon the occasion of the writing of each such prescription or the making of each such dispensation.

This Act further provides that every physician shall keep a record of all such drugs administered, dispensed, or professionally used by him. There is exemption that no record need be kept of drugs used by the physician "in the treatment of any one patient" when the amount dispensed or used does not exceed 8 grains in any 24-hour period.

It is quite clear that both the State and Federal laws forbid the sale by physicians of potentially harmful drugs, and that if the physician dispenses drugs he must actually examine the patient, find a medical need for the drug, and actually establish a physician-patient relationship. In addition thereto, if the physician furnishes the drugs to a "patient" in order to comply with the law, he must furnish a container for the drugs bearing the name of the "patient," the date, directions for use, and the physician's name.

I think it is appropriate also at this time to direct to your attention another provision of the Barbituric and Amphetamine Statute which is generally misunderstood by most physicians and many pharmacists. A physician may give an oral prescription to a pharmacist for any of the barbituric acids or deratives or compounds (which includes the amphetamines), but the Statute provides that the PHYSI-CIAN must confirm the oral prescription to the pharmacist in writing within 72 hours. The Law further provides that if the oral prescription is not comfirmed in writing within the 72 hours, the physician shall be guilty of an unlawful act. The law provides for a fine of up to \$500.00 and one year's imprisonment, or both, for each offense.

I am very much concerned because I find that physicians generally are under the impression that it is the duty of the pharmacist to obtain the written prescription, and upon failure to do so, the pharmacist incurs a legal liability. The law does not inflect the penalty upon the pharmacist, but upon the "prescriber," which means the physician. Systematic inspections are being made at the present time of pharmacies in this State. I am informed that charges will be made against physicians where oral prescriptions have not been confirmed in writing as required by the Statute.

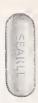
I hope that this opinion can be given to the practicing physicians of this State for their protection and guidance.

> Yours very truly, Eugene R. Warren

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<sup>1.</sup> Asher, L. M.: The Choice of Anticholinergic Drugs in the Treotment of Functional Digestive Diseases, Amer. J. Dig. Dis. 4:260-275 (April) 1959.



### **BOOK REVIEWS**

CLINICAL METABOLISM OF BODY WATER AND ELECTROLYTES, by John H. Bland, M.D., Associate Professor of Clinical Medicine, and Director, Rheumatism Research Unit, University of Vermont College of Medicine; Attending Physician, Mary Fletcher and De Goesbriand Memorial Hospitals, illustrated, pp. 623, published by W. B. Saunders Company, Philadelphia and London, 1963.

This textbook is exceptionally well written and is more thorough than most textbooks on electrolyte and water metabolism. There are numerous illustrations, a moderate number of charts and an abundance of references. This book is relatively outstanding in its field. It is written by a group of authors under the editorship of Dr. Bland. It is highly recommended as a text to medical students and as a reference to practicing physicians.

ENZYMES AND DRUG ACTION, Ciba Foundation Symposium, illustrated, pp. 556, Editor for the Ciba Foundation A. V. S. de Reuck, M.Sc., D. I. C., Editor for the Co-ordinating Committee for Symposia on Drug Action J. L. Mongar, Ph.D., published by Little, Brown and Company, Boston, Massachusetts.

This is a fascinating book covering a wide variety of biochemical reactions. There is a chapter on the Inhibition of Acetylcholinesterase. This is of great interest because of the relationship to myasthenia gravis, etc. Perhaps the most interesting chapter is that on insulin and its action on sugar permeability. Digitalis is discussed. Drug tolerance is considered. All in all, this is a fascinating book. It is of great interest to the research minded internist. It is of limited value to other physicians.

THE INNERVATION OF BLOOD VESSELS, By T. A. Grigoréva. pp. 442, illustrated, published by Pergamon Press, New York, Oxford, London & Paris, 1962.

This text is written by a member of the faculty of Histology of the 2nd I. V. Stalin Moscow State Medical Institute. It has been translated and the english translation is good. The text is highly specialized and will be of interest principally to those interested in the field of perfieral vascular disease and their treatment. The book is complete. It includes a tremendous number of references covering almost 50 pages out of 442.

This book is of a highly specialized nature and is not of interest to the general medical public.

Volume 1, Second Edition, GASTROENTEROLOGY, By Henry L. Bocus, M.D., Emeritus Professor of Medicine, University of Pennsylvania Graduate School of Medicine. pp. 958, illustrated, published by W. B. Sanders Company, Philadelphia & London, 1963.

This book is a medical classic and deserves the highest possible praise. It is encyclopedic in its scope. It is well organized along rather conventional lines for this type of text. The different sections are written by various outstanding authors including Drs. Roth, Shay, Burket and others. The book is exceptionally well illustrated. There are numerous charts. There are excellent bibliographies of particular interest to medical students and interns for

the section on Gastric Function. Dr. Shay has authored an exceptionally good chapter on Gastric and Duodenal Ulcer.

This book is heartily recommended to all medical students.

This book is heartily recommended to all medical students, house staff and practicing physicians.

W. B. SAUNDERS COMPANY features the following new editions in their full page advertisement appearing elsewhere in this issue:

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## Synergistic Toxicity of Gram-Negative Bacteria and Colloidal Hemoglobin

M. S. Litwin, C. W. Walter, P. Ejarque, and E. S. Reynolds, *Ann Surg* 157:485 (April) 1963

Combinations of gram-negative bacteria, lysed red cells, and compatible whole blood were injected into dogs. Bacteria after or during intravenous injection of hemoglobin caused death. Autopsy revealed reticuloendothelial cells filled with hemoglobin. Bacteria after compatible whole blood caused only mild effects. Psychrophilic bacteria grown in human blood caused increased red cell fragility. Toxic acid hematin was produced in the plasma. After a contaminated blood transfusion, exceedingly fragile red cells are lysed releasing free hemoglobin. This is taken up by, and "blocks," the reticuloendothelial system and potentiates otherwise sublethal quantities of bacterial toxin and acid hematin. The importance of fresh compatible blood for administration to patients in shock, particularly those suspected of having gram-negative bacteremia, is stressed. If there is evidence of hemolysis or plasma discoloration in blood to be administered, the specimen should not be used.

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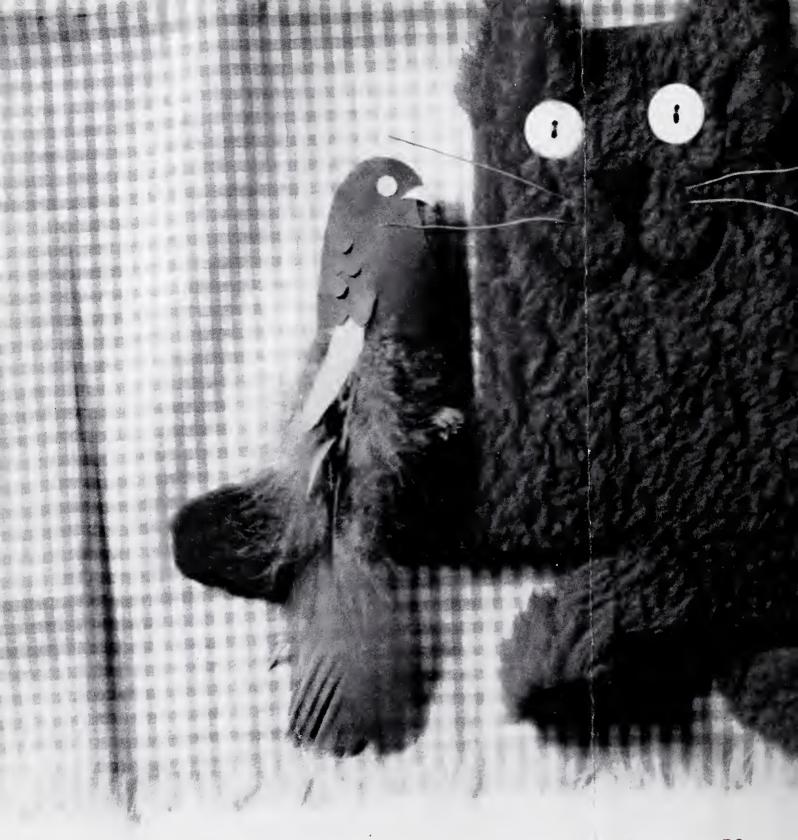
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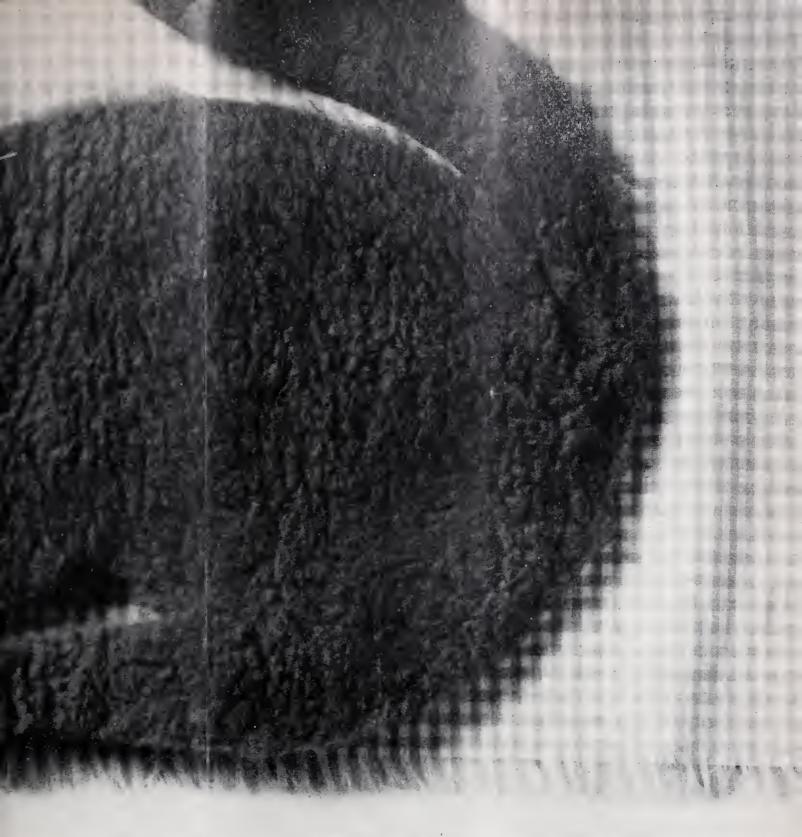
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NEWS-Our readers are requested to send in items of news, also marked copies of newspapers containing matter of interest to the membership.

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## THE JOURNAL OF THE ARRANSAS MEDICAL SOCIETY

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VOLUME 60 • SEPTEMBER, 1963 • NUMBER 4

## **Emergency Management of Cervical Spine Injuries**

Benjamin W. Drompp, M.D.\* and Austin Grimes, M.D.\*\*

That the head and neck are vulnerable areas of the body in the high speed of modern life is a well known fact. Conversely, the fact that diagnosis and management of fractures and fracture-dislocations of the cervical spine often presents a very difficult problem to the clinician is not appreciated enough. The soft tissue injuries to the neck in association with the hyper-extension and hyper-flexion mechanisms of high velocity impacts has been well publicized under the term of "whip lash injury" and is such a diffuse and involved problem that this paper will not be able to deal with this aspect of acute cervical spine injuries. It would seem that a treatise outlining some of the pitfalls and problems in evaluation of those patients with acute cervical spine injuries, in which the fracture or fracturedislocation of the cervical spine has been incurred, would be in order. A few of the cases treated by members of the orthopedic staff of the University of Arkansas Medical Center during the past few months would seem to justify this opinion. Thus, this paper will outline a method of evalnation and care of patients with neck injuries in which a fracture or fracture-dislocation is present.

HE COMATOSE PATIENT WILL PRESENT the most difficulty in evaluation as to the presence or absence of cervical spine injury. Until the attending physician can assure himself that a fracture or fracture-dislocation of the cervical spine does not exist, the comatose patient must be treated, transported and managed as if he does have such an injury. The position of the head of the patient, rotated to either the right or left and with some suggestion of resistance to repositioning to the mid line, suggests that a fracture or fracturedislocation may exist. There is very little else to suggest evidence of fracture or fracture-dislocation to the cervical spine in the comatose patient. Therefore, until the patient is no longer comatose and can cooperate in his examination, the physician must necessarily depend on X-ray evaluation of the cervical spine alone in order to assure himself that all is well. Roentgenograms visualizing the entire cervical spine from C-1 to T-1 in the anterior-posterior and lateral views as

\*Professor and Head, Division of Orthopedic Surgery, University of Arkansas Medical Center.
\*\*Chief Resident, Division of Orthopedic Surgery, University of

Arkansas Medical Center.

well as the open mouth views of the odontoid process (Fig. 1) must be used as the base in determining cervical spine injury in the comatose patient. Obviously, a unilateral fracture-dislocation



Figure 1. Open mouth X-ray view of odontoid process and second cervical vertebrae in a 48-year-old female at six weeks post-injury. Note that odontoid process has shifted to the left and that lateral mass of second cervical vertebrae is depressed. (Arrow). This patient complained bitterly of pain behind the left ear.

or a dislocation that has spontaneously reduced cannot be excluded by these routine X-ray views.

The cooperative, conscious patient is much easier to evaluate. But, even in these patients, there are many subtle manifestations of fracture or fracture-dislocation of the cervical spine. It is usually obvious that a patient with a quadriplegia or paresis of all four extremities and who has a corresponding sensory deficit has had a rather severe injury to the cervical spine and cord. These patients demand immediate treatment in the form of traction and immobilization<sup>5</sup> even for transportation to the Radiology Department for necessary

X-ray evaluation of the injury. A recent article in the Journal of American Medical Association by T. B. Quigley3 has pointed out that a very satisfactory device for applying traction and immobilization to the cervical spine for transportation is available even in those areas where all of the facilities for definitive treatment of the cervical spine injuries are not present. He has pointed out that many patients with injuries to the cervical spine have had the situation deteriorate into quadriplegia and death by improper precautions in transportation of the patient. It should be pointed out that attempts at immobilization of cervical spine by placement of sandbags on either side of the head and neck are rather futile and should be relegated to the armentarium of the first aid worker rather than that of the physician.

An occasional patient will be seen with a neck injury who presents himself with what appears to be only a temporary period of paralysis or of paresthesia. These patients usually represent an incident of the cervical spine having suffered an incomplete dislocation with temporary impingement on the cervical cord and this, in turn, has been followed by a spontaneous reduction of the dislocation. The diagnosis of these patients will then be established by carefully supervised flexion and extension lateral X-ray views of the cervical spine which will once again demonstrate the dislocation and its reduction. These patients usually require treatment of surgical nature for it has been observed2 that those fractures and fracturedislocations of the cervical spine that are most easily reduced are those that present the most instability.

In those patients not presenting themselves with the picture of quadriparesis or quadriplegia, other symptoms usually localized to the neck and upper extremity only, will cause the physician to suspect cervical spine injury. Paresthesias, numbness, and weakness of the musculature of the upper extremities should immediately suggest a cervical spine injury. Such symptoms may be unilateral or bilateral depending upon the type of fracture or fracture-dislocation. These symptoms arise as a result of trauma to the nerve roots that exit from the cervical spine to form the brachial plexus. An occasional unfortunate patient may present himself with loss of function of the upper extremity and an associated neurological deficit which will represent avulsion of the nerve roots from the cord within the dura. These patients require myelographic evaluation early in the course of management for if the nerve roots have been avulsed there is irreversible damage and recovery will be impossible.

Neck pain and inability to voluntarily move the neck are prime reasons for suspecting serious neck injury in a patient and demand X-ray evaluation in order to assure everyone that injury to the cervical spine has not occurred. A particular feature of neck pain is noted in fractures of the lateral masses of the second cervical vertebrae (Fig. 1) in which there is also referred pain to the head and neck posterior to the ear. This of course arises because of innervation of the articular surfaces of the first, second, and third cervical vertebrae by branches of their corresponding nerve roots that also supply sensory fibers of the posterior portions of the head and neck. Roentgenographic examination of the patient with suspected fracture or fracture-dislocation of the cervical spine demands the personal attention of the attending physician. In the case of the patient with the obvious quadriparesis or quadriplegia, portable X-rays of the patient's cervical spine may be obtained after the patient has had his neck stabilized by traction applied to the skull. Occasionally, pathology in the lower cervical spine is not demonstrated by these roentgenograms, but additional studies can be delayed until the patients' condition has stabilized. Technically, adequate X-rays of the lower cervical spine in these quadriplegic patients is often impossible to obtain until the patient is taken to the Radiology Department. With his traction maintained, the patient may be transferred on to the X-ray table where films of better detail may be obtained.

For those patients in whom fracture or fracturedislocation is suspected, the best roentgenographic evaluation is obtained in the Radiology Department and the patient should be transferred from the emergency room to the Radiology Department in a "four-poster" cervical collar. Usually, adequate X-rays can be made in this collar. If not, after these preliminary films suggest that the visualized portion of the cervical spine is not injured, the "four-poster" cervical collar may be removed by the attending physician who should then assume full responsibility for all positioning of the patient's head and neck during subsequent roentgenographic evaluation. These subsequent films should then include antero-posterior and lateral views of the cervical spine with use of special open mouth view to visualize the odontoid process. If review of this set of films fails to show any frac-



Figure 2. Oblique X-ray view of cervical spine in flexion (Boylston) in 36-year-old male who complained of persistent neck pain four weeks after injury. This view demonstrates unilateral facet dislocation at C-6 on C-7 level.

ture or fracture-dislocation of the visualized portions of the cervical spine, additional views will be required. These should be oblique views of the cervical spine which may show a shift of vertebral body in its relationship to an adjacent body much easier than standard antero-posterior and lateral views.

In case of suspected dislocation of the cervical spine with spontaneous reduction, it may be necessary to have special lateral roentgenographic views of the cervical spine taken in flexion and extension positions. Positioning of the patient for these films should be the responsibility of the attending physician. Occasionally, unilateral dislocation of the facets cannot be detected in the routine views and oblique views of the cervical spine in flexion as recommended by Boylston<sup>1</sup> (Fig. 2) are indicated. Finally, if all techniques fail to reveal the suspected fracture or fracturedislocation, and this may occur particularly in the lower cervical vertebrae from C-5 to T-1, it may be necessary to obtain special lateral laminographic views (Fig. 5) of the lower cervical spine in order to visualize these vertebrae.

A satisfactory method of preparing and immobilizing a patient with a suspected fracture or fracture-dislocation of the cervical spine for emergency transportation has already been mentioned in this paper.3 However, it should be reiterated that patients with obvious quadriplegia should have traction applied to the skull immediately and all transportation of these patients should be accomplished with constant traction being applied to the skull. Skeletal traction to the skull is preferable and remains the treatment of choice in conservative management of all fracturedislocations and dislocations of the cervical spine. It should be pointed out, however, that canvas or flannel head halter devices are quite satisfactory for temporary traction and the patient may be able to tolerate as much as twelve to fifteen pounds of traction for a short time if these devices are properly used.

For those patients, in whom there is not the major neurological deficit as seen in the quadriplegic, the "four-poster" collar may be applied for transportation anywhere within the hospital or even for ambulance transportation.

It is not the intent of this paper to discuss fully all the details of the treatment of patients with fracture-dislocation or dislocation of the cervical spine, but it is quite important to remember that



Figure 5. Case Number One—Status of cervical spine 3 months after injury, showing further anterior and inferior slipping of seventh cervical vertebrae.

patients with neurological deficit represent a combined neurosurgical and orthopedic problem and that additional consultation from both neurosurgeons and orthopedic surgeons is essential in the management of these patients. Those patients without neurological deficit or with relatively minor neurological problems are often managed by the orthopedic consultant alone. We would like to point out that a relatively new approach exists for stabilization of those patients with unstable fractures and fracture-dislocations of the cervical spine. This newer technique calls for stabilization of the cervical spine by an interbody



Figure 3. Lateral view of cervical spine in 35-year-old male showing solid interbody fusion at 4½ months post-surgery.

fusion (Fig. 3) using an anterior approach to the vertebral bodies. This procedure has many superior features as compared to the posterior spine fusion that has been standard method for stabilizing the unstable cervical spine in the past.

To illustrate some of these problems of emergency management of cervical spine injuries that have been encountered during the past year, a few problem cases that have been managed by the members of the orthopedic staff of the University of Arkansas Medical Center will be presented.

CASE NUMBER ONE. A. H. This 51-year-old male



Figure 4. Case Number One – Lateral view of cervical spine in 51-year-old male with fracture of posterior neural arch of C-7 and anterior displacement of body of C-7 in its relationship to T-1. (Details sharpened with ink for purposes of photography). Injury apparently not recognized and patient discharged from hospital wearing plastic collar.

patient injured his neck in a truck accident in southwest Arkansas in June of 1962. He was admitted to a hospital where X-rays were obtained of his neck and only minor fractures were suspected for he was treated in a cervical head halter for several days and then placed in a plastic collar for immobilization. His original X-rays in the hospital (Fig. 4) reveal that he had a fracture of the posterior neural arch with dislocation of the 7th cervical vertebrae anteriorly on the 1st thoracic vertebrae. The significance of the X-ray findings in the lower cervical spine were apparently unrecognized and the patient was allowed to be discharged from the hospital. Approximately 3 weeks after his injury the patient, while wearing his collar, rolled over in bed and felt a sudden sharp pain in his lower neck and immediately noted onset of progressive weakness in all four extremities. Upon presenting himself to the University of Arkansas Medical Center in September, 1962, lateral X-ray views of the cervical spine suggested that there had been further anterior and inferior displacement of C-7 in its' relationship to the first thoracic vertebrae (Fig. 5). In order to confirm this impression, special lateral laminographic views were obtained (Fig. 6). These show that C-7 is now lying in front of T-1. Cervical laminectomy and decompression has allowed some progressive improvement of his neurological deficit.

This patient represents a severe disability resulting from failure to have adequate X-ray visualization of the lower cervical spine.

Case Number Two. J.E. This 52-year-old man injured his neck in a fall from a porch roof in



Figure 6. Case Number One—Lateral laminogram of cervical spine 3 months post-injury, showing that C-7 has migrated anteriorly and descended inferiorly in front of T-1. (Vertebral bodies are outlined in ink for purposes of photography).

August of 1962. Because of complaints of pain in his neck he was admitted to a hospital in central Arkansas, where X-rays revealed that he had an anterior dislocation of C-4 on C-5. Recognizing that this injury required orthopedic care, the patient was

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Figure 7. Case Number Two—Lateral X-ray view of cervical spine of patient that had been transported 70 miles in an ambulance without the benefit of neck immobilization. These views show anterior dislocation of C-4 on C-5.

transferred to the University of Arkansas Medical Center. Upon his arrival at the Medical Center, his cervical spine was X-rayed again (Fig. 7). Fortunately, although he had been transported in an ambulance for a 70 mile distance without any type of protection for his neck injury, he had only a minor neurological complaint and had not suffered any worsening of his neurological picture by having been transported without proper immobilization of his neck. The dislocation was reduced by skeletal skull traction and an interbody fusion utilizing the anterior approach was successfully performed after his condition stabilized.

Lack of proper immobilization for transportation could have been disastrous for this patient.

CASE NUMBER THREE. H. C. This 42-year-old male incurred an injury to his cervical spine in an automobile accident near his home in northwestern Arkansas. Because of his complaint of pain in the region of the lower cervical spine, X-rays were obtained of his neck, and these revealed a dislocation of C-6 on C-7 and a unilateral fracture of the right articular facet at C-7. The patient was treated by three weeks of cervical head halter traction which apparently reduced the dislocation quite satisfactorily. After the three week period of traction, he was placed in a "four-poster" collar and discharged from the hospital with the advice to gradually remove the collar as he felt better. Approximately seven weeks after his injury, he removed the brace and resumed some of his usual activities. While working on the motor of his car and in a rather awkward position, he felt a sudden sharp pain in his



Figure 8. Case Number Three—Lateral view of cervical spine of patient whose immobilization was discontinued 7 weeks after his injury. This view shows recurrence of deformity at the C-6 on C-7 level.

neck accompanied by paresthesia in the right upper extremity. He was brought to the Little Rock Veterans Administration Hospital and admitted for further treatment. X-rays on admission revealed that the deformity had re-occurred with dislocation of C-6 on C-7 (Fig. 8). He was treated by several weeks period of skeletal skull traction with satisfactory realignment of the cervical spine. His cervical spine was then stabilized by an interbody fusion between C-6 and 7, utilizing an anterior approach.

The recurrence of the dislocation in this patient occurred because of the failure to realize that an easily reduced dislocation is often very unstable and probably should have been treated by cervical spine fusion prior to being ambulated.

Case Number Four. V. M. This 14-year-old male was injured in an automobile accident in a community some 50 miles southwest of Little Rock. He incurred an injury of his neck and a severe laceration of the scalp. X-rays at the community hospital suggested a fracture of the odontoid process and he was transferred to the Arkansas Children's Hospital for



Figure 9. Case Number Four—AP view of cervical spine by open mouth technique revealing fracture at base of the odontoid with minimal displacement in 14-year-old male transported over 50 miles in ambulance without benefit of immobilization.

definitive care. He was transported by ambulance without benefit of immobilization. Fortunately, upon his arrival at the Arkansas Children's Hospital he failed to show any evidence of neurological deficit and was immediately immobilized by head halter traction so that his scalp laceration could be repaired. Following this, skeletal skull traction was applied. After the patient stabilized, and approximately five weeks from the time of his injury, his cervical spine was stabilized by bone grafting the lamina of C-1 to C-2.

This patient represents an incident in which no serious sequelae resulted from his odontoid fracture but could easily have become quadriplegic or died because of any unguarded manipulation of his neck during the period of transportation.

### **SUMMARY**

The emergency care of cervical spine injuries has been summarized briefly in this paper and has pointed out a number of pitfalls in management of these injuries that may be avoided by adherence to basic principles of management of this type of injury. Adequate immobilization must be utilized at all times in management of these patients and careful X-ray evaluation of patients with neck injuries will avoid the possibility of missing a very serious cervical spine injury. The attending physician must assume complete and personal responsibility for all portions of the evaluation of these patients until the patient is safely placed in traction. Recurrence or worsening of the cervical spine deformity will not result in permanent cord damage and possible irrecoverable damage if these principles are observed in the management of the patient with neck injury.

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## REMARKS BY CONGRESSMAN DURWARD G. HALL Arkansas Breakfast—AMA Meeting, Monday, June 17, 1963

Just a few weeks ago, an American Air Force major whizzed around the world 22 times at fantastic speeds . . . surpassing not only the speed of sound, but also the speed of most of our imaginations.

Some 200 miles east of Boston, Naval research ships were probing the depths of the ocean . . . some 8,400 feet below the surface, seeking to find the remains of the nuclear sub "thresher."—FBM-ANP-

I cite these diverse examples only to point out that man has extended his influence hundreds of miles into outer space, a thousand fathoms beneath the ocean, but the greatest problems *still* confronting us, are those here on earth. We live in the age of the rocket and the atom, of delivery means and total destruction! Its come quickly—we can't ignore it!

We live in times of great stress and the knowledge that the *immediate* and the *near* future, promise even *greater* stress.

In this setting, I have had three years in which to compare 25 years of "doctoring" with 3 years of "politickin", in the world's greatest legislative body. I'm thankful for that opportunity.

I have learned two things, which may seem surprisingly simple, but which I feel are nevertheless worth mentioning:

First, the politician would do well to be more knowledgeable about the world of medicine in which the doctor operates, and in which he (the politician) presumes to legislate.

Second, the doctor would do well to be more knowledgeable about the world of government in which the politician operates.

To most of us, in customary, casual consideration, our system of government, seems quite simple and easy to understand. The *fact* is, that our form of government is *most* complicated. It's most difficult of comprehension, and can be properly understood only by a knowledge of the events of history which produced it, and an understanding of the political science, the will, the economics, the spiritual faith, and philosophy which have determined its form.

Increasingly I receive more and more letters from persons expressing views on current issues,

which coincide *completely* with my own views in Congress. Yet, these letters sometimes chide me for "what you folks in Congress are *doing* or *failing* to do."

Sometimes they end with a stern demand to know what I, as a member of Congress, am doing, or propose to do about it. Sometimes I'm tempted to respond to this type of letter with an equally blunt "inquiry."

What are you doing about it! What do you intend to do about it! Frankly too many people who write justifiably anxious and indignant letters to their Congressmen, display only a superficial understanding of the processes of representative government. At least they write.

They ignore the fact that what Congress *does*, is rather what the *majority* of Congress does.

These letters ignore the elemental political fact that if the people of the United States do *not* approve of the actions of a majority of the Congress, they the people, must change the make-up of that majority every two years. This is representative government—our genious of personal as well as geographic representation for control by ballots and not bullets; for government by law, not man!

The issues that face the Congress are not merely confined to (1) medicare, or (2) raising the debt limit, or (3) the level of federal spending, or (4) lack of foreign policy and the Cuban defeat:

Usually, when these issues reach the floor of the Congress, it's already too late. If the Congress were controlled by those who believe in responsible, conservative, constitutional government, these would never be the issues.

Instead, nation would be talking and discussing bills to free private enterprise from government competition in over 700 instances, bills to reduce federal spending to levels that would justify a substantial tax cut, bills to lower the national debt limit instead of to extend and increase it, bills to curtail federal pre-emption of tax funds so that local communities and states could meet their local responsibilities.

Senators and representatives tend to become identified either as "conservatives" or as "liberals" but over the years these labels have meant dif-

ferent things to different people.

The root word or derivative of "liberal" is the same as "liberty." A few decades ago, those called liberal fought to take the power away from the kings and emperors and to give it to the parliaments; now it is the "liberals" who are anxious to give more and more power to the executive at the expense of the legislative branch. To the point of "full circle return" to autocracy.

So long as the *liberal* philosophy (according to current usage), is dominant in the *Congress*, and in the *White House*, and in the regulatory agencies; for *so long* will those who believe in conservative constitutional government be forced to wage a *defensive* and *relaying* action.

In so doing, unfortunately we acquire a "status quo image." But bear in mind that we aren't fighting, merely to maintain, the "status quo." We're fighting to keep our country from heading down the path toward the welfare state and socialism. Make no mistake about it, and don't longer apologize for the term! And until we have a majority in the Congress, and a sympathizer in the White House, we can't begin to progress back in the direction of freedom and free enterprise. We're too busy trying to hold our own, and prevent a further backslide into the middle age idea of a benevolent dictatorship.

Perhaps I shock you with such a strong word as dictatorship, whatever adjective I use to precede it. If so, then you haven't been reading some of the things "the planners," have been saying. Within the past two weeks the junior senator from Pennsylvania (Clark) was quoted as criticizing all our legislative bodies, community, state and federal; for impeding the wise hand of the all-knowing executive branch. We've indeed come "full circle," when the liberals begin preaching abolition of our legislative bodies because they don't buckle under to the executive branch.

Sometimes even what's left of the conservative press is "taken in" by cries that Congress isn't getting much work done, or that we've only passed 7 or 8 bills in the first 5 months of the session, or that we should overhaul our own machinery. They complain that the nation isn't moving ahead, as long as the Congress slows down the legislative mill.

What they ought to realize is that the slow-down in the flow of liberal legislation is not a result of "thumb twiddling" but rather the result of bitter and constant struggling within the

respective committees of the Congress where all legislation must first be considered, indeed all appropriations originate in the House of Representatives until such time as the executive branch can get the judicial branch to set the Constitution completely aside, I dare say that a reticence to pass new frontier legislation is preferable to passage of bills like the King-Anderson Bill, or others which enhance the objectives of the planners. I've been studying and considering adjourning, as the best single prescription for this country.

But, let no one think that Congress "isn't doing anything," because there isn't a massive flow of *new* legislation. The way the White House has been sending proposals over to Capitol Hill, the failure to pass many bills is, in fact, an indication that Congress *is* working extremely hard to prevent *bad* legislation!

I hope our country hasn't reached the point where progress is measured by the *number* of bills passed in a given session of Congress. Yet, some of the news media would lead its readers, to that conclusion.

Now in all this apology for the difficulty of the "conservative" minority to pass constructive legislation, or stop bad legislation, I don't want to leave the impression; that we can't do *anything* in Congress, until we can elect a majority. We've practically stopped backdoor raids on the treasury, we've prevented collective big government "power-grabs" than the "sorry" reorganizational act, and this past week defeated the political grab bag area redevelopment agency expansion to \$1 billion.

To await a majority would be a doctrine of political suicide, rolling over and playing dead, or guilt of *omission!* Congress, in fact, *is* the place where minorities does do something. Its members have the responsibility to *inform* the citizens, they represent. This is no easy task in this day of "managed" news. But only by taking our story to the American people, can we win support for responsible, conservative and constitutional causes.

Here again, the task isn't easy. The pressures that can be brought to bear by an entrenched political machine which controls the granting of radio and TV licenses, which for the first time in U.N. history in 1962 has the absolute authority to initiate anti-trust investigations without proof of being suspect, which can damn almost

any free enterprise principle as contrary to the "public interest," is hard to imagine. (Land recapture and "right" of eminent domain.)

Thus it was only three weeks ago, on a nation-wide telecast featuring the "emmy" awards, that prominent members of the administration were given free time over network television to present some of the awards and thus project something called a "favorable image", in "new frontier" jingo.

We had the under secretary of state, a few key senators and congressmen, but nary one member of the minority party. Perhaps some network TV executive thought Mr. Newton Minnow (or his successor) would think better of the *vast wasteland* if it was liberally sprinkled with new frontiersmen. Look at any TV guide for a given week and notice the in-balance between conservative and liberal spokesmen on so-called "public affairs" programs. In the House this week is a bill being considered to amend the communications act so the F.C.C. will no longer have to grant "equal time," as for as the president is concerned.

Don't feel that I've become distraught, frustrated, or cynical! I'm not!! I'm excited, challenged and keen for victory! Although the differences that divide the "liberal" and the "conservative" are much deeper, the focus of the present struggle is on what is termed "federal spending" or the "battle of the budget."

The reason for this is simple. If the "planners" can be deprived of their funds, it will be more difficult to put their plans into effect. To date its been an unlimited and uninhibited grab bag. By planned living beyond our means for the first time, we are wasting precious accumulated capital . . . government spending is building a concentration of political power so great, that it is becoming unlimited power . . . and any government which spends a very large share of the national income, must manage the news in order to justify those expenditures.

It's foolish *self-delusion* to imagine that the "planners" are economic illiterates, or "theorists", or academic dreamers. They're *shrewd* in *all* techniques—these long-hairs! They know economics better than almost any conservative, but they simply don't care about those things which conservatives know are important. They care about *power*, and a *controlled* involuntary planned economy.

They've built a political machine which they

think is *invincible*. At the *top* are the "planners" who devise the strategy or those behind *them!* At the base are the mass and often paid organizations which keep solid blocs of voters in line, especially in northern metropolitan areas. In between is a stable of "vested interests," that is, of minority or pressure groups, which profit in the long run from government spending and provide a good deal of the public opinion in favor of it.

Oh yes, the eagle of "statesmanship" ofttimes plunges with abandon, into the abyss of "expediency" for the bait of taxpayers "pork."

This political pyramid of the "planners," their obedient masses, and the vested interests, is the most powerful "political force" in the United States. Its technique is to split the parties and make both impotent. The political pyramid concentrates first on its selection of a president, and it's working constantly to extend its power in various congressional districts. Note that on no issue recently have more than 28 southern conservatives *voted* conservative, until June 12 when the coalition again coalesced — but truly for the benefit of primarily one direction in defeating A.R.A.

The campaign to reduce the power of this liberal "coalition" must be both short-range and long-range:

The short range goals should include:

- 1. Reduction in spending first, and taxes second
- 2. Restoration of the *power of Congress* to control the total budget, including return of the Bureau of the Budget to Congress (as the G.A.O.) priorities for spending and limiting legislation only, always including ways and means.
- 3. Reducing the outflow of gold by cutting down on overseas spending, protecting our own, and austere will to be competitive even if it means lowering production costs.
- 4. Halting new federal or federal-state programs, especially those which have no financing or revenue features, or expiration dates, and observe the first and tenth (Bill of Rights) Amendments to the constitution as well as the four-teenth!

It was this latter goal which prompted me to oppose HR 12, the Medical School Construction Bill, a position which I regret to say, did not coincide with the position of the headquarters of our AMA. I do not believe we can "have our cake and eat it too," and I find it hard to believe

we should take the same "bait" which has created so many other federal "dependents."

I don't mean to preclude legitimate areas of government-medical cooperation such as we have had in years gone by. Cooperation that led to the U. S. Public Health Service, the Food and Drug Act which we have supported and expanded, and many research programs where the federal government has a legitimate interest, but let's differentiate between what is the proper function of government and what is *not*.

And principle should be considered ahead of dollars. If we're hooked, who knows better how to get off the habit!

Sometimes I think a closer study at history would be invaluable, not only in resolving our domestic problems, but those which face us on an international scale as well. E.G.—specie and silver arguments of early 1800's vis-a-vis our one week in April '63—a) remonitization of silver certificates. b) exceeding federal budget limit; and c) rebuff of Tariff Act of '62 by E.C.M.

As I said earlier, we've faced times of crisis before. It's vital that we apply our knowledge and the lessons of history in meeting those crises. History records explain past events as steps in human progress. History is constantly repeating itself, making only such changes of program as the growth of nations requires. If no use is made of the labors of past ages, the world must remain always in the infancy of knowledge, for "history maketh a young man to be old, without either wrinkles or grey hairs, privileging him with the experience of age, without either the infirmities or inconveniences thereof."

In our time, many of our people realize suddenly that stress confronts our country. They are appalled by the "real dangers," that surround us. In their terror they can't believe that any comparable stress ever faced our people. Well, let me remind you, our nation has *constantly* faced danger. This was true during the colonial period and was compounded during the critical period of 8 years between the end of the revolutionary war and the adoption of our constitution. What about the war between the states? Have we again come "full circle?"

Each era has had its problems unique to its period. Whether that problem be George Washington's struggle with a bankrupt new (emerging) nation, or Madison's unwilling involvement in

the war of 1812; or the expansion brought on by Jefferson's purchase of the Louisiana Territory; or President Monroe's Declaration of the Monroe Doctrine to expunge European and Asiatic influence in this hemisphere; or the anguish of Lincoln with a nation divided in the bloodiest war of our history up to that time; or Rutherford Hayes abiding by the compromise as to whom had been elected president and having the fortitude to end the military occupation of the Confederate States; McKinley's decision to enter into war with Spain; Wilson's crisis in World War I, and the even greater problems that faced most of us in our country in the days following Pearl Harbor. And then Korea, now Viet Nam, Berlin and Laos.

The issues have varied and perhaps seemed to have little relationship to each other. But taken together the fact that we were able to meet each of them, foreign and domestic, accounts for not only our survival as a nation, but for our astounding progress.

Today differs only from yesterday in that our problems are more complex, more widespread and more challenging. They range from outer space to the ocean depths, from southeast Asia to depressed mining towns in West Virginia. They are in eras of expanded travel over shortened distances, and enhanced (even through controlled) communications.

No man knows all the answers, but this I do know. Whether we are as equal to the problems as were our forefathers depends on the kind of men we select and elect to public office. This in turn, depends absolutely on the interest, perception and will of the people!

I offer only one word of advice. In your own responsibility as a citizen to participate in the selection of candidates for public office, do not look first of all for someone who says he is willing to vote your way no matter what.

Look for the man of principle, who may sometimes even vote against you. But when he does, you know he does so on his judgment and not because he was bought, pressured, or so worried about his re-election it was the expedient thing to do.

If you dedicate yourself to the selection of this kind of public officials, I have no doubt that you and the profession experience more sweet victory than bitter defeat, that in truth, the nation will not only survive, but prosper in a *free* government of law.

## A Form of Medical Partnership Agreement

by

Law Department, American Medical Association

### COMMENT

This form is intended as an aid to the lawyers who prepare partnership agreements for physicians. It cannot be used by simply substituting names since each situation is different and a suitable partnership agreement should be tailored to the specific needs of the parties. However, it is believed that the form will suggest the basic points which should be covered.

A sound partnership agreement for physicians should be geared to tax as well as personal, professional and business considerations. Before beginning this work we reviewed numerous medical partnership agreements—not mere forms but actual agreements now in effect. We were astonished to find that some of these partnership agreements did little more than recite that the parties are partners. Others were obviously prepared without any thought to tax consequences, and only a few dealt in any detail with payments to a retiring partner or to the estate of a deceased partner.

Our objective in publishing this form is to suggest to lawyers the scope of the provisions that may be included in a comprehensive medical partnership agreement. We have been particularly conscious of the influence of the 1954 Internal Revenue Code.

Physicians are particularly concerned about providing retirement income for themselves and an estate for the protection of their families in the event of death. Special provisions have been included in Section 736 of the 1954 Internal Revenue Code which apply to payments to a retiring partner or a deceased partner's estate. Even in a two-man partnership it is now possible, by including proper provisions in the partnership agreement, to liquidate the interest of a retiring or deceased partner with a minimum of tax hardship.

Section 736 and Regulations 1.736-1 recognize that when a partner retires he ceases to be a partner under local law. However, for purposes of the partnership provisions of the 1954 Code, a retired partner or a deceased partner's estate is treated as a partner until his interest in the partnership has been completely liquidated.

When payments are made to a retiring partner or the estate of a deceased partner, the amounts paid may represent several items. In part, they may represent the value at the time of his death or retirement of the withdrawing partner's interest in the assets of the partnership (furniture, furnishings, surgical equipment, etc.). Also, part of such payments may be attributable to his interest in uncollected accounts and part to an arrangement among the partners in the nature of "mutual insurance."

When a partnership makes such payments to retire the withdrawing partner's entire interest in the partnership, the payments must be allocated between (a) payments for the value of his interest in assets, except uncollected accounts, and (b) other payments. The remaining partners are allowed no deduction for the amounts paid for his interest in assets since they represent a purchase of the withdrawing partner's capital interest by the partnership (composed of the remaining partners).

The portion of the payments made to a with-drawing partner for his share of (a) uncollected accounts, (b) good will (in the absence of an agreement to the contrary), (c) or otherwise not in exchange for his interest in assets will reduce the amount of the distributive shares of the remaining partners. Guaranteed payments are deductible by the partnership and are taxable as ordinary income to the recipient.

A retiring partner or a deceased partner's estate receiving payments under Section 786 is regarded as a partner until the entire interest of the retiring or deceased partner is liquidated. Therefore, if one of the members of a two-man partnership retires or dies, the partnership will not be considered to have terminated until his entire interest is liquidated. Accordingly, even in a two-man partnership, provisions may easily be made for guaranteed payments to a partner's widow that reflect the value of the deceased part-

ner's share of good will in the partnership practice. These payments will be a business deduction to the remaining partner although taxable as ordinary income to the widow.

Section 736(b) states that payments made to a retiring partner or to a deceased partner's estate are not considered as payment for the partner's share of good will (even though realistically this may be contemplated) unless the language of the partnership agreement specifically provides for payment with respect to good will. Under these circumstances, the amounts received by the recipient constitute payment for a capital asset, taxable at capital gain rates to a retired partner and generally not involving payment of income tax by the estate. The continuing partners would be entitled to no deduction for their payments for good will since this is regarded as payment for partnership property.

This type of a provision in the partnership agreement helps a retiring partner by permitting him to treat the payment as capital gain instead of ordinary income. However, it deprives the partnership of an immediate deduction. Ordinarily, the overall immediate tax liability will be less if the continuing partners who usually would be in a higher tax bracket are in a position to treat the payments as a business deduction.

The above illustrates the importance of tax considerations and the opportunities which exist for partners to make elections in the drafting of the partnership agreement that may ultimately result in substantial tax savings.

Paragraph 15 of the form which follows provides for 36 monthly payments determined by a stated formula, to be paid to a retired partner or the estate of a deceased partner. Although intended to reflect the withdrawing partner's share of good will, they should not be considered as payments for good will under Section 736(b) because they are not specifically designated in the agreement as payments for good will.

## MODEL MEDICAL PARTNERSHIP AGREEMENT

### by

### Law Department, American Medical Association

AGREEMENT made January 3, 1961, among Allen Adams, Bernard Benson, Charles Collins, Donald Dorsey and Edward Emerson, doctors of medicine, all of Springfield, Illinois.

- 1. Formation of Partnership. The parties hereby form a partnership to engage in the general practice of medicine under the laws of the State of Illinois and in accordance with the Principles of Medical Ethics of the American Medical Association.
- 2. Name. The name of the partnership shall be "Drs. Adams, Benson and Associates" or such other name as the partners may later adopt.
- 3. Location. The offices of the partnership shall be located at 1550 Henderson Street, Springfield, Illinois, or at such other place as the partners may later designate.
- 4. Duration. The partnership shall begin on January 3, 1961 and shall continue until dissolved as herein provided.
- 5. *Capital*. The initial capital contributions of the partners, consisting of cash, office furniture and surgical equipment, are as follows:

		Agreed Value	
	Cash	of Property	Total
Allen Adams	<u>\$3,500</u>	\$5,000	\$8,500
Bernard Benson	3,000	4,500	7.500
Charles Collins	1,500	5,000	6,500
Donald Dorsey	1,500	2,500	4,000
Edward Emerson		None	None

Any partner whose capital account is less than \$8,500 shall, at the end of each calendar year in which his share of partnership net profits exceeds \$10,000, contribute 15% of his share of partnership net profits to the partnership capital until his capital account amounts to \$8,500. No interest shall be paid to any partner on his capital account or on any undistributed partnership profits.

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6. Profit and Loss. For the calendar years 1961 through 1966 and thereafter, the net profits of the partnership shall be divided and the net losses shall be borne in the following proportions:

	1961	1962	1963	1964	1965	1966 and thereafter
Allen Adams	28%	27%	26%	25%	24%	23%
Bernard Benson	25%	21%	23%	22%	22%	22%
Charles Collins	22%	22%	$\frac{220}{0}$	$\frac{220}{6}$	21%	20%
Donald Dorsey	15%	16%	17%	18%	19%	20%
Edward Emerson	10%	11%	12%	13%	14%	15%

In case the share of Edward Emerson in net profits shall be less than \$10,000 in 1961 or 1962, his share shall be increased to that amount, and the deficit shall be contributed by the other partners in proportion to their profitsharing ratios. Upon the death, withdrawal, retirement, or expulsion of a partner, as hereinafter provided, his percentage of profits and losses shall be divided among the remaining partners in accordance with their percentage interests.

- 7. Expenses. All rents, medical supplies, premiums for professional liability and other insurance, dues to medical societies, salaries, wages and other expenses incidental to the partnership business shall be paid out of the profits or capital of the partnership, except that each partner shall be entitled to an expense account not to exceed \$150 per month (unless approved by the other partners) for out-of-pocket expenses incurred in business entertainment, attending scientific meetings, and operating an individually owned automobile in the partnership business. No expenses shall be reimbursed unless the partner shall first present an itemized voucher which shall be retained as a partnership record.
- 8. Salaries and Drawings. No partner shall receive any salary for services rendered to the partnership. The drawings of the partners during the first year of the partnership shall not be in excess of the following amounts each month:

Allen Adams	2,000
Bernard Benson	1.700
Charles Collins	1,590
Donald Dorsey	1,000
Edward Emerson	700

Thereafter, each partner shall have the right to draw against anticipated profits an amount equivalent to but not in excess of four-fifths of his share of partnership net profits for the preceding year in equal monthly installments. Each partner shall have the right, at the end of any calendar year, to withdraw the balance of his share of the partnership profits for that year after making the capital contribution, if any, required in paragraph 5.

- 9. Banking. All funds of the partnership shall be deposited in bank accounts designated by the partners having a majority interest in profits and losses. Such partners shall also designate three partners, one of whom shall be the managing partner (see paragraph 12), who shall be authorized to sign checks and make withdrawals. All checks and withdrawals shall require the signatures of two authorized partners. For the safekeeping of insurance policies, office lease, important partnership documents, and especially confidential medical records, a safety deposit box shall be maintained at the First National Bank of Springfield and access shall be permitted upon the signature of any two partners.
- 10. Books. The partnership books shall be maintained at the offices of the partnership and each partner shall at all times have access thereto and shall be at liberty to make such extract therefrom as he may desire. The books shall be kept on the cash receipts and disbursements basis and shall be balanced and closed semi-annually as of June 30 and December 31. An audit shall be made as of the closing dates by a certified public accountant.
  - 11. Vacations and Sick Leave. Each partner shall be entitled to vacations and sick leaves as follows:
  - (a) Each partner shall be entitled to three weeks and expected to take at least two weeks vacation in each calendar year, at times to be determined in the manner most convenient to the partnership business and the partners individually. An additional week of time off from partnership duties shall be allowed without adjustment of earnings, to permit attendance at medical meetings and postgraduate courses, provided such absences shall be equitably rotated among the partners. Unused days of vacation may be carried over to future years only upon approval and to the extent agreed upon by the partners having a majority interest in profits and losses.
  - (b) Each partner shall be entitled to three weeks sick leave in each calendar year because of actual sickness or accident, without an adjustment in earnings. Unused sick leave may not be carried over to future years nor used for additional vacation, but additional sick leave may be obtained by a corresponding reduction in vacation days in any calendar year.
  - (c) In each case where a partner's vacation or sick leave exceeds the permissive limit, an adjustment of the partner's earnings shall be made. Such partner's share in the partnership earnings for that year shall be

### A FORM OF MEDICAL PARTNERSHIP AGREEMENT

- reduced at the rate of 1% for each week off in excess of the permissive limit. The reduction shall be credited to the other partners in proportion to their profit-sharing ratios, as stated in paragraph 6.
- 12. Duties and Management. Each partner shall devote all of his time, knowledge and skill to the business of the partnership. All of the partners shall participate in the management of partnership affairs but the decision of the partners having a majority interest in profits and losses shall prevail in:
- (a) Matters relating to general management, professional policy, and the purchase of furniture and equipment costing more than \$500.
- (b) The assignment of professional duties (house and hospital calls, emergency and night calls, office duties, etc.) and the responsibilities of each of the partners.
- (c) The selection of a partner to serve as managing partner.

The managing partner shall be selected at the beginning of the calendar year and shall serve in this capacity for the calendar year or until a successor shall be duly selected. The managing partner shall have authority to carry out and implement decisions relating to general management and professional policy, to purchase medical supplies, furniture and equipment up to \$500, and to employ or discharge, and to supervise and fix the compensation of nurses, technicians, and office employees,

- 13. Restrictions. No partnership shall, except with the written consent of the partners having a majority interest in profits and losses:
  - (a) Endorse any note, or act as an accommodation party, or otherwise become surety for any person, or assign, mortgage or sell his share in the partnership or in its property, or enter into any agreement as a result of which any person shall become interested with him in the partnership.
  - (b) Contract any debt on account of the partnership, or in any manner pledge the credit thereof, except in the usual and regular course of business and in accordance with the provisions of this partnership agreement.
  - (c) Directly or indirectly engage in the operation of a drug store or any business, profession, or occupation other than the partnership business, provided that nothing herein contained shall prohibit the activity of any partner in investing or trading in stocks, bonds, or other forms of investment, for the account of himself or his family.
  - (d) Treat any person as a patient if requested by the managing partner not to do so.

Each partner shall at all times pay and satisfy his own personal debts.

- 14. Partner's Negligence. The payment of damages and expenses for which the partnership may be liable as a result of any alleged act of negligence or professional liability on the part of any partner shall be chargeable against him individually to the extent that such damages and expenses are not paid or reimbursed under a policy of insurance.
- 15. Withdrawal. Any partner shall have the right to withdraw from the partnership at the end of any calendar year provided written notice of intention to withdraw shall be given to the other partners at the offices of the partnership at least four months but not more than five months prior thereto. The partnership books shall be closed at the end of the calendar year in the usual manner and the withdrawing partner shall be paid the balance shown in his capital account, increased by his share of partnership profits, or decreased by his share of partnership losses, and decreased by his drawings against anticipated profits. The net amount payable to a withdrawing partner shall not include any share in uncollected fees received by the partnership subsequent to such date. The net amount payable to a withdrawing partner shall be payable without interest in four equal consecutive quarterly installments, the first being payable one mouth after the effective date of withdrawal.
- 16. Expulsion. The following grounds shall each constitute a sufficient reason for the partners having a majority interest in profits and losses to expel an offending partner from the partnership:
  - (a) If any partner shall, in their opinion, engage in personal misconduct, or a breach of this contract of such a serious nature as to render his continued presence in the partnership personally or professionally obnoxious or detrimental to the other partners or the partnership.
  - (b) If any partner shall be expelled, suspended, or otherwise disciplined by the final action of any professional or scientific organization.
  - (c) If any partner shall resign from any professional or scientific organization under threat of disciplinary action,
  - (d) If any partner shall be convicted of any offense punishable as a felony or involving moral turpitude or immoral conduct.
  - (e) If any partner becomes insolvent, makes an assignment for the benefit of creditors, is declared a bankrupt, or his assets are administered in any type of creditors' proceedings.

No partner shall be expelled without at least ten (10) days prior written notice which shall state the reason for expulsion and shall be signed by the partners having a majority interest in profits and losses and shall be delivered

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to him either in person or mailed to his last known residence. Upon the mailing or the delivery in person of such notice, the recipient's duties as a partner shall cease immediately and he shall be deemed to be expelled from the partnership on the date fixed in the notice. The partnership books shall be closed at the end of the semi-annual accounting period in the usual manner and the expelled partner shall be paid the balance shown in his capital account, increased by his share of partnership profits or decreased by his share of partnership losses, based on the ratio of the number of days prior to expulsion to the number of days in the semi-annual accounting period. This amount shall be decreased by his drawings against anticipated profits. The net amount payable to an expelled partner shall not include any share of uncollected fees outstanding as of the end of the semi-annual accounting period in which expulsion shall occur nor any fees received by the partnership subsequent to such date. The net amount payable to an expelled partner shall be payable without interest in four equal consecutive quarterly installments, the first being payable one month after the end of the semi-annual accounting period in which the expulsion shall occur.

- 17. Restrictive Covenant. With the exception of Allen Adams and Bernard Benson, any partner who shall withdraw from the partnership in accordance with the provisions of paragraph 15 or who shall be expelled in accordance with the provisions of paragraph 16 shall not engage in the practice of medicine, directly or indirectly, within Sangamon County, Illinois, for a period of three months from the effective date of withdrawal or expulsion if he shall have been a partner for one year or less, or for one year if he shall have been a partner for more than one year but less than ten years. This paragraph shall be inapplicable to any partner who shall have been a member of the partnership for ten years or more if the partnership shall be dissolved in accordance with paragraph 19.
- 18. Retirement or Death. Any partner may voluntarily retire from the partnership after he has reached the age of sixty-five, provided written notice of intention to retire shall be given to the other partners at the offices of the partnership at least three months prior to the effective date of retirement. Any partner who shall be disabled because of illness, accident, or other cause, and is therefore unable to perform his normal duties as a partner for a continuous period of six months or longer, may be retired from the partnership by action of the partners having a majority interest in profits and losses. Upon the retirement or death of any partner the partnership shall pay the retired partner (or his estate in the event of his death after retirement) or the estate of a deceased partner, the following amounts:
  - (a) For thirty-six consecutive months following retirement or death, an amount each month equal to one-third of his average monthly earnings from the partnership in the four years (or such shorter period as he may have been a partner) immediately preceding retirement or death.
  - (b) His share of the net profits of the partnership to the date of retirement or death, less withdrawals made by him against his interest therein, payable ninety days after the date of retirement or death.
  - (c) An amount equal to his capital account on the date of his retirement or death, payable in four semi-annual installments beginning six months after the date of retirement or death.

A retired partner or the estate of a deceased partner shall have no interest in uncollected fees. If any retired partner shall compete with the partnership in any way during the thirty-six months immediately following his retirement, he shall forfeit all remaining payments that would otherwise become payable under sub-paragraph (a). A retired partner or the legal representatives of the estate of a deceased partner shall have the right to examine the books and records of the partnership to the extent that such examination shall be necessary to determine the amount of any of the payments set forth above. The remaining partners shall have the right to continue to use the name of any retired or deceased partner in any manner that is consistent with medical ethics and customs.

- 19. Dissolution. The withdrawal, retirement, expulsion, or death of any partner shall not dissolve the partnership and shall have no effect upon the continuance of the partnership business. He or his estate shall have no rights in or against the partnership or the remaining partners except for such payments as may be due under the provisions of this agreement. In the event of dissolution of the partnership such payments shall be paid in full before any distribution of partnership assets shall be made to any partner. Upon agreement in writing of all the partners, the partnership may be dissolved at any time. Notwithstanding the provisions of paragraph 15, the other partners by agreement shall have the right, within forty-five days after receiving a notice of intention to withdraw, to serve upon the withdrawing partner written notice of their intention to dissolve the partnership. Upon the timely service of such notice of dissolution, the notice of intention to withdraw shall become invalid and the partner who had given the notice of withdrawal shall be deemed to have consented in writing to the dissolution, and the partnership shall be dissolved at the end of the calendar year or sooner, as may be specified in the notice of dissolution. Where there is a sufficient reason under paragraph 16 to expel a partner, the other partners may by agreement and in lieu of expulsion elect to dissolve the partnership by serving the offending partner with a notice of dissolution which shall specify the effective date of dissolution and the basis for their action.
- 20. Files. Immediately upon any dissolution of the partnership, the partner who has usually treated a particular patient shall be entitled to the latter's file unless the patient requests a different disposition thereof. A partner who shall withdraw from the partnership shall only be entitled to the records or files of those patients whom he treated as a member of the partnership and whom he also treated before he became a member of the partnership. The estate of a deceased partner shall not be entitled to any of the records or files of the partnership except records and files relating to the personal matters of the deceased partner and not including the medical records of any patient.
- 21. Additional Partners. The partners having a majority interest in profits and losses shall have the right to admit additional partners and to fix the capital contributions, if any, and the participation percentage in profits and

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losses of such partners. All of the partners shall relinquish an equal proportion of their own participation percentage in profits and losses to any additional partners who may be admitted. Before being admitted each additional partner shall first agree in writing to be bound by the applicable terms of this partnership agreement.

22. Amendments. No amendment or variation of the terms of this agreement shall be valid unless made in writing and signed by all of the partners.

IN WITNESS WHEREOF the parties hereto have signed and sealed this agreement.

Allen Adams	(SEAL)
D	(SEAL)
Bernard Benson	(SEAL)
Charles Collins	(SEAL)
Donald Dorsey	(SEAL)
Edward Emerson	(SEAL)



## Characterization of "Meat Anemia" in Mice and Its Prevention by Copper

J. Ilan, K. Guggenheim, and M. Ickowicz, *Brit J Haemat* 9:25 (Jan) 1963

The authors mention earlier investigations in which they had demonstrated that anemia, accompanied by stunted growth and high mortality, developed in young mice fed a diet composed entirely of meat. This anemia could not be prevented by pyridoxine, folic acid, vitamin B<sub>19</sub>, or iron, or by any combination of these hematopoietic factors. Beef liver both prevented and cured the anemia. Liver of normal mice had a weak hematopoietic effect, whereas the liver of mice rendered anemic by the meat diet was ineffective in preventing or curing the meat anemia. This report is concerned with further investigations on this problem. It was found that severe anemia which is mainly macrocytic and slightly hyperchromic developed in young mice fed only with raw beef muscle for 6 weeks. The bone marrow of the anemic mice was hyperplastic and contained cells of a megaloblastic type. The iron level of the serum remained normal, but its ironbinding capacity was much increased. The anemia was both prevented and cured by adding copper to the meat diet, whereas manganese and molybdenum were without effect. Skeletal muscle is a very poor source of copper in contrast to liver or kidney. Feeding heart muscle in place of skeletal muscle did not result in anemia, as the copper content of this tissue is higher. Anemia did not develop in rats fed beef muscle for long periods,

possibly because they acquire a higher copper reserve during their suckling period than do mice. Rat milk contains about 10 times as much copper as milk of other species. The morphological aspects of copper-deficiency anemia vary widely in different species.

### The Frequency of Spontaneous Abortion

D. B. Roth Int J Fertil 8:431 (Jan-March) 1963 Spontaneous or unintentional abortion is one of the prime causes of loss of life. The abortion rate as judged by hospital admissions is about 7% to  $10^{\circ\circ}$ . While some cases of intentional abortions may be brought to the hospital as "incompletes," in most of the hospitalized women abortion was unintentional. However, many women abort at home, and some are not even aware that a late, heavy menstruation was really an abortion. Thus the true rate of abortions is higher than that indicated by the hospital admissions. The author presents clinical data which indicate that the over-all loss of pregnancy due to spontaneous abortion is between  $8^{o}_{0}$  and  $16^{o}_{0}$ , and the true figure is probably close to the higher one. An increased rate of loss can be expected in the women with previous abortions. Thus after up to 3 consecutive abortions, 20% to 30% would be expected to abort, and after 4 or 5 the precentage would be up to 35. These figures are lower than those calculated by Malpas and Eastman but the author feels that these lower figures represent a more accurate and more hopeful prognosis.



## What's New in Ophthalmology

J. B. Cross, M.D.\*

The Subnormal Vision Clinic of the Arkansas Enterprises for the Blind at Little Rock has been opened and is now operating on a regular schedule. The Subnormal Vision Clinic has as its purpose to encourage the use of the limited vision of the nearly blind by prescription of and training with optical aids. Optical aids are various optical appliances from simple optical lenses to the most complicated of lens systems.

In the last twenty years a great deal of emphasis over the country has been placed in the field of ophthalmology on helping these people who previously had been advised that their vision was so poor that nothing could be done. These subnormal vision clinics under the direction of ophthalmologist are used mostly in the field of rehabilitation.

The various optical aids available on the American as well as the foreign market have been used with a great deal of varying success. Reports bearing from miraculous improvement to such limited use that many aids have received a bad name. It is probably because of this poor understanding of optical aids that the field of subnormal vision has moved so slowly. However, the past decade has seen rapid acceptance of optical aids both by the general public and physicians working in the field.

It is my purpose in writing this article to both announce the opening of this ethical clinic as well as to explain the procedure that the clinic follows.

The Arkansas Enterprises for the Blind, a non-prolit organization backed by the Lions Clubs of Arkansas, established a center in Little Rock in 1946 at the present location on Fair Park Boule\*Medical Arts Building, Little Rock

vard. The Enterprises for the Blind has come into its own with a large physical plant with many service departments. One of these departments is the Subnormal Vision Clinic.

Upon the invitation of the Board of Directors I joined the staff for the purpose of setting up and directing this clinic. After visiting several other subnormal vision clinics we established our clinic with a grant from the Federal Government approximately a year ago. We have been in operation a little less than a year and are seeing patients on a weekly basis.

The clinic routine is one of multiple visits. All patients are carefully screened by a social worker, Mrs. Dozalo Russell, who both screens the candidate from a psychological as well as a visual standpoint. All the candidates who might be aided and are properly motivated are then given an appointment to the clinic. The patient is advised that no panaceas can be offered and that there will be numerous follow up visits before deciding what help if any can be offered.

The first visit is spent in a routine ophthalmological examination and refraction of the patients eyes. For the next visits the patient is usually refracted at weekly intervals. After a number of refractions the patient is further quizzed on exactly what optical problem they really need help on from the standpoint of what they desire to accomplish with the use of their limited vision. Optical aids are then tried with a particular goal in mind to accomplish the various specific optical problems. After an aid is decided on, the various technical procedures of prescribing such an aid are

entered. The aid once prescribed is placed in the patient's hands, first on a loan basis and the patient is followed at weekly intervals as they progress in their ability to use this aid. The aid once mastered is then dispensed to the patient for permanent use. It is necessary to have a follow-up routine at three to six months intervals to see that the aid is used properly.

The Subnormal Vision Clinic has excellent backing by: the Lions Clubs of Arkansas; Enterprises for the Blind; the State Rehabilitation Service and the Federal Grant program. With this financing the Clinic has been able to stock all the known available optical aids for demonstra-

tion, as well as use in the clinic. This not only gives the Clinic a completeness in its service but it serves a double purpose in that it demonstrates to the patient that some of the unfounded claims made for some optical aids are not true thus helping to properly motivate the patient. The obvious expense of equipment and the time consuming procedures involved in this type of work make it apparent that there is very little financial remuneration in working with these cases. The clinic wishes to point this out in order to reassure the referring physician that the clinic is not in competition with them in duplicating work that could be done in a private office.



### Value of Alkaline Phosphatase in Diagnosis of Ectopic Pregnancy

A. Russo and B. Macchioni, *Minerva Ginec* 14: 1138 (Dec 15) 1962

The practical value of Kaplow's technique—a histochemical determination of the index of alkaline phosphatase activity in the cytoplasma of neutrophil granulocytes, by means of uniform or granular precipitation of insoluble materials—was studied in 3 groups of women. Eleven patients had ectopic pregnancy, 10 had physiological pregnancy, and 5 nonpregnant women were observed as controls. The results indicated that in the nonpregnant women, free of any clinical or hematological condition which might interfere with their normal leukocytic enzymatic activity, the values of phosphatase index were below 60, with a median value of 33.8, whereas in the patients with normal pregnancy the values ranged from 178 to 224. In those with ectopic pregnancy the values ranged from 86 to 149, with one exception, an index of 20 observed in a woman in whom tubal abortion occurred. In the ectopic pregnancy group there was only 1 false positive diagnosis, a patient with an inflammatory process and a phosphatase index of 96. The findings indicate that the index of alkaline phosphatase activity in the cytoplasma of neutrophil granulocytes has a diagnostic value in cases of ectopic pregnancy, although no correlation could be found between the values obtained and the stage of pregnancy or the location of the placenta.

## Electrolyte Content of Extracellular Fluid in Health And in Congestive Heart Failure

C. T. G. Flear and P. Hughes, *Brit Heart J* 25:166 (March) 1963

Serum from 157 healthy subjects (age range 16-55 yr) was analyzed for sodium potassium, and chloride in order to establish the distribution of serum levels in health. Average values found were sodium 138 mEq/liter, potassium 4.3 mEq/liter, and chloride 106 mEq/liter. Serum in 4 healthy subjects was analyzed daily for about 2 weeks in order to determine the variability of serum levels in the same person. The average coefficients of variation were sodium  $0.95^{\circ}_{0}$ , potassium 6.8%, and chloride 1.7%, as compared with 2.1%,  $10.3^{\circ 7}_{00}$ , and  $2.5^{\circ 7}_{00}$  respectively for the group of 157 healthy subjects. In 73 patients (36 men and 37 women) in congestive heart failure serum was analyzed on admission and 3 times each week while in the hospital. Levels of all 3 electrolytes were frequently abnormal, sodium and chloride tending to be low and potassium to be raised. In most of the 73 patients these levels were also found to be less steady than in the healthy subjects. Greatest variability was found most often in patients in severe congestive heart failure and least variability in those responding fairly quickly to treatment. The lower the level of sodium attained during an episode of congestive failure, the greater was the fluctuation in serum levels.

### TEACHING SEMINAR

University of Arkansas Medical Center Little Rock, Arkansas



### Problems of Adolescence

James L. Dennis, M.D.

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The adolescent period was once considered to take place between 15 and 18 years. It has steadily and rapidly expanded during the past 50 years so that today it reaches up to 25 years or more, and down to 10-12 years of age. As a result, modern man is now spending a considerably longer portion of his life as an adolescent. This creates problems.

The phenomenon is both sociologic and biologic. As physicians, it behooves us to have some insight as to cause and effect if we hope to be more helpful to boys and girls and to young men and young women.

Physical size has great status significance to the adolescent. Unlike the pre-adolescent child, the adolescent has great concern and anxiety about his body. If a boy, he wonders, "Will I grow taller?" "What kind of a man will I be?" or if a girl, "Will my breasts develop more?" or, "Am I ever going to stop growing?" The parents will ask the same questions of the physician and add another, "Doctor, can't you give him some medicine to make him grow?" or, "Can't you give her some medicine to stop her from growing?"

Adolescents do not want to be "different." For them, to be different is to be abnormal. Physicians must help them and their parents understand that a boy may be shorter than average but is perfectly normal; or a girl may be taller than the average and still be a normal girl.

On the other hand, we must recognize that for

the short boy and the tall girl their anxiety is not entirely fantasy. The boy is short and for boys social and athletic success is related to size. (Besides, girls like tall boys). Being too tall poses a problem for the young girl, too. She may want to date taller, more mature and older men at a time she is quite immature emotionally, if not sexually. These adolescent differences, though normal, do produce temporary maladjustments. The small boy is likely to display unacceptable behavior in an effort to prove that he is more masculine than he is, and sometimes tall girls behave in a manner that suggests they are trying to avoid the appearance of being feminine.

In earlier times the adolescent was largely confined to the primary influence of the family and family acquaintances. Grandparents and relatives were frequently living in the same house, or nearby. Adolescent peers were under nearly identical pressures to conform and since they have always identified with one another, a stage of adult responsibility was more easily achieved. Schools and churches had limited enrollments. Close contacts between parents, ministers and teachers allowed the student to experience school and church almost as an extension of his home. In the culture of today we find that many ministers remain in distant secondary relations with the adolescent who is shunted to a church "youth group" to be further isolated with his peers. Teachers no longer like to cope with the problems of the individual

child but instead send them to "school counselors." Not only churches and schools, but government organizations, unions and medical institutions provide special departments for the adolescent group. Thus, the adolescent is continuously and progressively isolated as a *member of a group*, as a result he has been socialized out of the family and into the group and society before he can establish acceptable standards of adult behavior.

Neither a child nor an adult, adolescents have always sought conforming identification with their own peers. Characteristically there has always been the need to establish identity, develop independence, and, if male, to prove his masculinity. In the past, if the stress became too great he could "run away" and "go west." Today he escapes into the anonymity of the group. Unfortunately, in the group, an adolescent may engage in conduct that is not really approved by him or even any one member of the group. Once an activity has been suggested no one dares risk his group status by being called a "square" or "chicken."

Sagacious promoters have learned that it is profitable to appeal directly to the adolescent and adolescent group without the prior approval of parents or school. Adolescents present a new, very large, rich and growing market. Clothes, cosmetics, rock and roll records, and portable radios comprise just a few of the products sold to them in tremendous quantities. Entertainment ideas and sex models are created and promoted through the mass media of magazines, T.V. and radio.

Technics are used to exploit the normal adolescent rebellion against adults and to take advantage of their conformity to group identification. Due to modern communication, irritating fads quickly become universal. Witness rock & roll — as popular, and almost simultaneously so, in Moscow, London and Sidney, as in New York or Los Angeles. The promotion of rock & roll records by the use of "payola" to Disc Jockeys — provided insight to the extent and success of this kind of promotion.

What has happened to make these changes occur? There is no uncomplicated answer. McKay feels that the impact of industrialized urbanization, an increase in the number of affluent families and the advent of the automobile have been most significant. Urbanization and industrialization have attracted families from stable rural cultures to the large city. The rural, agricultural

family maintains a cooperative, mutual family economy to which the members of all ages must contribute. Rural institutions and discipline remain relatively uniform from year to year and the rural adolescent can attain adult status rapidly by assuming responsible adult work and do it without losing face with his peer group, who are doing the same things. In the city, this transition becomes very difficult. Young people are neither needed or wanted by commerce, labor, or industry. Even odd jobs are scarce, so the teenager is forced into a leisure class culture in which the only accepted role is that of a student - (in Ir. High, High School or College). As a result, these institutions, whether they like it or not, have been cast in the key role of influencing, molding and containing adolescent behavior, and they have replaced the family in this respect.

Paradoxically many school officials, government representatives and the leaders of other institutions who deal with adolescent groups, persistently back away from any implication that they should have responsibility for the control of behavior of the individual members of the adolescent group. How many times have you heard the clichés, "We cannot teach what the parents should have taught," or, "We don't have bad children—just bad parents." These are only partial truths, sometimes used as excuses by officials and children alike. The way the school may influence and control behavior, entertainment, speech and the dress of the adolescent has not been sufficiently recognized, nor accepted.

I recently encountered a young man who excused serious deviations in behavior with the comments, "Don't blame me, blame my parents, they are responsible for what I do." It is important to hold adolescents responsible for what they do. This is in itself a very important part of growing up. Although it is true that pre-adolescent children, quite unconsciously, take over the codes, standards and values of their families, at adolescence things change; teenagers begin to operate on different frequencies. Teenagers and parents find it difficult or impossible to get through to each other. An interested coach, teacher or minister can provide invaluable guidance at this time. Let's face it, in times of stress almost any other adult can communicate with an adolescent easier than can his parent. At the same time, the adolescent is acutely conscious of the parent's attitude. He is the first to be disappointed when parents do not measure up to his own idealistic standards.

Paradoxically, the teenager seems compelled to look not to adults but to his own associates for the approval or disapproval of his own actions.

Youth and group behavior varies widely by area, social class and ethnic culture. We have mentioned the difference between rural and urban adolescents. The other area of contrast is between groups in affluential districts and underprivileged districts in the large city. The Chicago Institute for Juvenile Research reports the profile of behavior of street gangs in underprivileged areas. They are characterized as follows:

- I) Deliberate flounting of adult authority in general.
  - 2) Readiness for physical combat.
  - 3) Rejection of the discipline of school.
  - 4) A tendency to sexual aggressiveness.
- 5) Continual search for "kicks"—including narcotics.
  - 6) Repudiation of work as a way of life.

To some extent the same motivating factors of rebellion and group conformity are also present in the adolescent groups of the more affluential districts. Although not truly delinquent, these youngsters exhibit behavior that is unconventional and is unacceptable and troublesome to adults. Fortunately, the youngsters are protected by their own established concepts of right and wrong, gained in earlier years; by the strength of the conventional institutions they attend and by the conventional adult with whom they have contact. The typical affluential adolescent will rebel and seek his kicks in a less destructive manner than will his underprivileged counterpart - but he does rebel and he does look for "kicks," usually with the automobile. In fact, the automobile may have caused a greater cleavage between the adolescent and adult than any other single factor. The car has become a necessity for dating. Possession or use of the car is a most important symbol of adulthood, especially for boys. It represents excitement, power and temporary freedom from adult restraints. Parents apparently are not very successful in resisting pressure to let the adolescent have the family car, or even one of his own. A study at one large school revealed that 68% of the high school students controlled the use of a car by the spring of their senior year.

Social problems are compounded by the progressively earlier physical maturation of children, this at a time the process of emotional maturation is becoming progressively longer. During the past

century the average age of the onset of menses in girls has decreased by about 6 months each decade. No doubt about it, boys and girls of today are physically ready for reproduction long before they used to be and long before they understand the meaning and responsibility involved in reproduction.

Presumably the youth of today could enjoy sexual freedom without entanglement in marriage but this is not acceptable in our society, where premarital relations are frowned upon despite the permission and encouragement of great freedom of association between boys and girls. In the past, marriage has been postponed as long as there were serious prerequisites and subsequent obligations tied to wedlock by the expectations of society. This appears to be undergoing a change with a growing trend toward adolescent marriages in spite of the lack of established economic independence. Young people are naturally impelled to explore sex, and they will indulge as much as they dare and in the easiest way they can. When the circumstances are weighed in favor of the socially accepted avenue of marriage, they will take this path as the simplest answer. A fundamental reason for the increasing number of teenage marriages is that there are fewer obstacles and countervalues to getting married than there used to be. The very fact that marriage is not now out of the question for adolescents has probably led to increased sexual license with a certain percentage of inevitable pregnancies leading to marriage. The lessening age of marriage, in turn, creates its other problems. The union in which the bride is under age 20 is three times as likely to end in divorce as the one in which the bride is 22 to 24. Some sociologists feel that adolescent marriages are a part of the whole problem of the isolated adolescent and his peer group psychology. Marriage has become acceptable to the group. It should be observed that when many of our young people marry early they are hardly expressing rebellion if they are conforming to the public sentiment that marriage is a good thing.

If there is a problem of teenage sex morals, it is in part a reflection of their earlier physical maturity. Modern youngsters not only develop earlier, they win prizes or prison sentences, take part in political meetings and engage in sexual intercourse earlier. Changes in statistics are affected by this age shift: figures showing an increase in sex offenses involving the age of consent is clearly one such figure, for the age of consent has not been altered by the appearance of earlier puberty.

#### Management

Thus far we have considered some of the central reasons for the problems of our adolescent culture. As physicians we must face the challenge and explore the problems of management. In dealing with areas of human adjustment there are no absolute or infallible rules, but only certain principles and axioms to enable the physician to offer guidance to the adolescent and his or her parents. First we propose that "adolescence" be defined in terms that are more meaningful than chronologic age, biologic development or social mores. Zimmerman has found it useful to consider any boy, girl, young man or young woman as adolescent, regardless of age, whose day to day living is almost entirely concerned with the following problems:

- 1) His need for emotional separation from his parents.
- 2) His struggle to establish his personal codes of behavior in regard to sex, marriage and vocation, and to do this in a manner acceptable to himself and his parents, as well as his peers.
- 3) His conception of himself as an adult and his vocational role in society.

Any youngsters with such characteristics needs help in many areas. For parents one of the most difficult areas of management is related to imparting factual sex information. It is apparent that we as physicians must make a conscientious effort to do a better job of interpreting the meaning of sex to children and parents and to do it earlier than we have done so in the past.

More times than not, parents have been unable to at any time discuss realistic and factual aspects of sexual growth with their children. It is probably important to ask parents who request us to talk with their adolescent child, whether the child has given any indication that he really wants a discussion and this question should again be put to the child when he appears at the office. If he says no, stop and invite him to return when he feels more ready and really has a desire to come. On this basis they usually wish to, sooner rather than later.

Experience has repeatedly demonstrated that today's adolescence have excellent anatomical and physiological factual knowledge about sexual functioning. This is not really what they are curious about. They are primarily interested in

the experience and feelings that surround sex relations. They want to know, "How does it feel?", "What Happens?", "What do you do?", "What is it like?"; precisely the areas that we usually avoid. Actually, most of their interest is in trying to understand what the opposite sex may experience, for here is where the most confusion exists. The adolescent boy and girl know there is a difference between them but they become confused because in the adult world sexuality for both sexes is generally described as male sexuality.

Sexual capacities that come with puberty are not the same for boys and girls. In boys, sexual desire is highly specific and clearly centered in the genitals. It is easily aroused by pictures, words and random thoughts. In boys, the desire is urgent. In girls, there are wide normal differences. A few girls may experience desire much the same as boys do and for others no direct sexual urges are experienced until much later in life. For most adolescent girls, "sexual stirring" is more descriptive than "desire." The feelings experienced by the girl are more diffuse and less well defined. Combinations of romantic yearnings, malaise, maternal yearnings and feelings such as anger or fear may appear. Sexual arousal must be brought about by direct stimulation of the body and once attained seems to be less climax oriented than in boys, at least in early womanhood.

For boys, sexual desire is separate from notions of love. If a girl yields to him he may "feel" that he is in love with her, but these are mostly the projection of his own needs and quite different from the love he will later feel as husband and father.

For girls, love takes priority over sexuality and they strive to fall in love. She never loses the underlying feeling that love leads straight to marriage. A fact that should be engraved in every young boy's mind. Girls, from the beginning are usually either finding a husband or practicing at finding one. Boys, on the other hand, are concerned first with sexual stimulation, second with companionship, third with love and only in the dim, distant future, with marriage. A discussion with the adolescent along these lines will help promote respect for his individual personal sexuality and this helps him develop the necessary image of self differentiation.

When the physician participates in helping adolescents solve their problem of sex difference and identity, he is making a valuable contribution to the potential for these patients to become better marital partners and better parents. This in turn can be a major factor in reducing or preventing behavior disorders in the children they produce.

Pregnancy in adolescence is usually a symptom of adolescent maladjustment except in the older adolescent who sometimes deliberately uses pregnancy to force a marriage. Even in very young unmarried pregnant girls, studies show that a pregnancy is not the outcome of ignorance about sexual functions. It is usually a neurotic solution to many aspects of general personal and home maladjustment. Young men should realize that young women sometimes use intercourse as a trap but one should not have to rely on cultivating sexual fears to promote sexual control. Knowledgeable self respect is better.

Now for some axioms and principles useful in meeting the many tests and dilemmas of adolescence. (After Chapman).

- 1) Couple restriction with privilege. Restrictions and prohibitions arouse resentment but it is usually possible to couple restrictions with privileges and gain acceptance. For example, "You must be in by midnight but you can invite your date in for refreshments and a half hour visit when you come home." When a young son is on his first campaign to have the car at night, soften your denial with, "I can't let you have the car out at night yet, but Sunday you may have it for 3 hours to take your girl friend swimming." This principle has many applications and its wise use can often smooth the rough course of parent adolescent relations.
- Couple a liberty with a responsibility. No matter how much you give, the adolescent continuously asks for more liberty. Some requests are reasonable, some are not. A policy of coupling a liberty with a responsibility does much to slow the rate of assumption of independence when it is too fast. Responsibility helps emphasize that increased independence actually does carry increased responsibilities. For example, if the daughter requests more liberty in entertaining friends at home, she should be given the responsibility of cleaning up afterwards. When the boy is given the car he should have the responsibility to keep it washed and polished. The privilege of dating should include the responsibility of introducing the dates to parents. Increased freedom should be coupled with the responsibility of keeping parents informed as to where they will be and when.

- 3) Couple a criticism with a compliment. It is necessary for parents to criticize at times, but such criticism should be tactful, firm and constructive, not humiliating, or prolonged nagging. No matter how just criticism may be, it arouses resentment and stubborn rebellion, if pushed too hard and too long. Couple your criticism with a compliment—an honest one. For instance, when an adolescent is unacceptably dressed and unkempt, say, "You're really a handsome boy, John, so go upstairs and tidy up." Or to the daughter, "Please go take off that mascara, you are a pretty girl and mascara only detracts from your beauty."
- 4) Spend some time with the adolescent. Talk with them but most important, listen, even when you cannot agree. When the "too young" boy asks, "When are you going to get me a car?"—parry with the question, "When do you think you will be able to help with the insurance and upkeep?" Then explore ways in which he might earn some money.
- 5) Give the adolescent space and privacy. A room of his own, if possible, even if small. When finances permit a private phone. This helps him build his adult image and feeling that his parents have at least a little understanding. Do not give any appearance of prying or snooping. Be interested but not too inquisitive.
- 6) Give praise and reassurance. In spite of cocky arrogance on the surface, the average adolescent has much self doubt and insecurity. Praise and reassurance about his basic abilities, talents and personal attractiveness are eagerly grasped, but the praise should be reasonable and honest. He should get from his parents the reassurance that he would otherwise attempt to get by unwise exploits.

Discipline: Adolescents expect their parents to provide rules, and they actually want the security of their support in this regard even though they will complain loudly about them at the time. Although parents must be prepared to draw the line, their authority must be flexible, reasonable and fair.

Some Don'ts:

- 1) Adolescents should never be humiliated, ridiculed or depreciated.
- 2) Adolescents should not be ignored.
- 3) Don't underestimate the strength of feelings, ideals, and emotions of adolescents.
- 4) Never nag an adolescent.

Because the adolescent finds peer approval more important than home approval, it seems

probably that more satisfactory juvenile standards will have to evolve through their own peer groups rather than from parents. Adolescents are seeking freedom. Rousseau once wrote, "Freedom is obedience to self-imposed laws," or, stated in reverse, "Slavery is obedience to the laws of others." Perhaps this is a clue to direct attention toward getting teenagers to regulate themselves. Actually, they are quite idealistic and need only the excuse of peer approval to deliver exemplary behavior. One effort in this direction was the Minnesota Teenage Code. The code was drafted by the adolescents in the community and subsequently discussed with responsible adults. In this manner they adopted rules governing such matters as suitable hours, conduct at parties, use of the automobile, proper dress and drinking. Perhaps each

community should call a teenage town meeting to arrange, discuss and formulate codes for their own particular area and group. The results could be revolutionary.

A good rule of thumb for parents is the rule of the four "L's":

Love them,

Let them grow,

Limit them-but be just-

Let them go-when you must!

James L. Dennis, M.D. BIBLIOGRAPHY

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#### Management of Tetanus With and Without Tetanus Antitoxic Serum: Comparative Study of 157 Cases

A. R. Barua, *J Indian Med Assoc* 40:106 (Feb 1) 1963

The author reports observations on 157 patients with tetanus who were treated in a West Bengal Hospital between October 1960 and January 1962. They ranged in age from 1 to 60 yr. Since the socio-economic standards of these patients made the cost of tetanus antitoxic serum (ATS) prohibitive, an attempt was made to evolve a less expensive method of treatment. In this regimen adequate doses of sedatives and of antibiotics (penicillin) were given. With regard to the use of ATS, the patients were divided into 3 groups. The 82 patients of group 1 received 50,000 units of ATS intramuscularly immediately after admission, followed by a second dose of the same size 12 hr later. The 49 patients of group 2 were given 20,000 or 30,000 units of ATS intramuscularly at the time of admission and again 12 hr later. The 26 patients of group 3 received no ATS. The mortality figures in the 3 groups were 31.7%, 32.38%, and 15.38%, respectively. These figures and the comparison of the average duration of spasm and the duration of hospitalization suggest that ATS is of doubtful value in the management of tetanus.

# Spinal Rheumatism: Therapeutic Value of Corticosteroids, Phenylbutazone, and Combined Phenylbutazone-Prednisone

F. Nebo, Hospital 63:389 (Feb) 1963

Of a series of 128 patients with spinal lesions, their ages ranging from 23 to 81 yr, rheumatoid arthritis was present in 22, osteoarthrosis in 64, paravertebral lesions in 36, and herniated discopathy in 6. In each category the results achieved by treatment with corticosteroids, phenylbutazone, and combined phenylbutazone-prednisone were evaluated. The latter form of treatment was considered the most successful. Although it did not "cure" the arthritic, osteoarthritic, or herniated disc processes, and the radiologic and biological alterations established before the treatment remained unchanged, the improvement obtained permitted the patients to lead an almost completely normal life. The therapy was well tolerated. Patients with rheumatoid arthritis suffered relapses with discontinuance or interruption of the phenylbutazone-prednisone therapy, whereas the therapy could be withdrawn from those with osteoarthritis or paravertebral lesions without recurrence of symptoms. The patients with herniated discs, however, did not obtain satisfactory results from any of the therapeutic methods reported. The authors recommend the combined phenylbutazone-prednisone treatment because of the satisfactory effects as to pain, inflammatory phenomena, and articular function.



#### WHAT IS YOUR INTERPRETATION?

TRACING #106

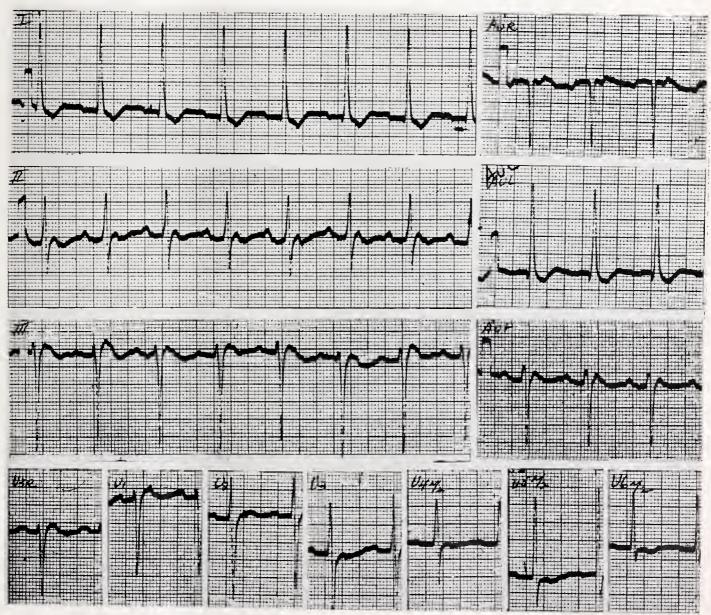
AGE: 53 SEX: F BUILD: STOCKY BLOOD PRESSURE: 260/150

MEDICATION: Digitalis, amount not known.

HISTORY: Severe hypertension for at least five years.

Sudden increase in symptoms of congestive failure.

Answer on page 160



The Department of Medicine, University of Arkansas Medical Center
\*James S. Taylor, M.D., Professor of Medicine

### WHAT IS YOUR DIAGNOSIS?

Prepared by the Department of Radiology, University of Arkansas School of Medicine, Little Rock

Answer on page 160





**CASE** #11

#AO2-86-71

66 year old colored male

History: The patient had recurrent pain in the metatarsal phalangeal joint of the great toe for five years.



#### PUBLIC HEALTH AT A GLANCE

# INFLUENZA AND INFLUENZA IMMUNIZATION 1963-1964

During the period January through May 1963 outbreaks of influenza-like illness were reported to the World Health Organization from numerous areas in Western Europe (Czechoslovakia, Denmark, France, Germany, Italy, Netherlands, Norway, Portugal, Sweden, Switzerland, United Kingdom), as well as from Jamaica in the West Indies.

Epidemics of influenza-like diseases became widespread in several areas of the Eastern United States during January 1963. The first confirmed outbreak of the season began early in the month in southern North Carolina. During the month of January the pattern of spread of the disease confined itself to a northerly and southerly direction along the Atlantic Seaboard. In early February a westerly spread began so that by late February large segments of Middle Western and South Central States became involved. By early March outbreaks were subsiding in most affected parts of the East and Middle West, however, the pattern of epidemic spread continued a westerly course. By late April one or more outbreaks of influenza-like disease had been reported from the District of Columbia and 45 States. Only the States of Florida, Hawaii, Nebraska, Nevada, and New Mexico failed to report increased incidence of this syndrome. Influenza A2 virus was implicated as the causative agent of one or more outbreaks in the District of Columbia and 34 States.

An outbreak of 525 cases of influenza-like disease in Lawrence County in December 1962 was the first indication of a possible increased incidence in Arkansas. By late March 1963, a total of approximately 45,000 cases had been reported from 35 of the counties of the State. Isolations of influenza A<sub>2</sub> virus were made from patients in

Jefferson, Pulaski, and Washington Counties.

The Surgeon General's Advisory Committee on Influenza met in Washington, D.C., on May 27, 1963. The Committee reviewed and discussed available data pertaining to the occurrence of influenza during 1962-1963 and other recent years, information regarding the characteristics of recent influenza virus strains, and material relating to the efficacy of influenza vaccine and its pattern of use. A summary of the principal conclusions and recommendations, as supplied by the Communicable Disease Center of the Public Health Service, are presented here.

Expected Occurrence of Influenza During 1963-1964. Influenza A-Widespread outbreaks of influenza A2 occurred in 1962-1963 in most areas of the United States except the West Coast and, since influenza A usually occurs in two to three year cycles, widespread outbreaks of influenza A2 are not anticipated this year. However, the West Coast has a greater likelihood of having such an outbreak during the 1963-1964 season by having been spared in 1962-1963. Influenza B-A nationwide epidemic of influenza B occurred during 1961-1962, and it usually occurs in cycles of not less than four to six years. An outbreak would not normally be anticipated, however, the identification of a sharply modified type B strain from Taiwan in 1962 posed some concern. So far, this strain has been known to be responsible for only a small number of illnesses in a single institutional outbreak in Taiwan, and it is unlikely that it will pose a problem to the United States during the coming winter season. However, an alert international surveillance will be maintained.

Long experience with influenza strongly emphasizes that certain groups of the population

are at greatest risk of death or severe morbidity should they acquire the disease. Polyvalent influenza virus vaccine has been repeatedly shown to be of value in preventing influenza. Therefore, annual immunization of these high risk groups is stressed, whatever the anticipated occurrence of influenza.

Population groups of greatest risk are:

- 1. Persons of all ages who suffer from chronic debilitating disease, for example, chronic cardiovascular, pulmonary, renal, or metabolic disorders, in particular:
  - a. Patients with rheumatic heart disease, especially those with mitral stenosis.
  - b. Patients with other cardiovascular disorders such as arteriosclerotic heart disease and hypertension, especially those with evidence of frank or incipient cardiac insufficiency.
  - c. Patients with chronic bronchopulmonary disease, for example, chronic asthma, chronic bronchitis, bronchiectasis, pulmonary fibrosis, pulmonary emphysema, pulmonary tuberculosis.
  - d. Patients with diabetes mellitus.
  - e. Patients with Addison's disease.
- 2. Persons in older age groups, those over 45 years of age and particularly those over 65.
- 3. Pregnant women—It was noted that some increased mortality was observed among pregnant women during the 1957-1958 influenza  $A_2$  epidemic in both this country and abroad. It has not, however, been demonstrated in subsequent years.

Since a two week delay in the development of the antibodies may be expected, it is important that immunization be carried out before influenza is apt to occur in the immediate areas. It is recommended that immunization should begin as soon as practicable after September 1 and be completed by mid-December.

Recent isolates of both the A and B strains demonstrate a continued change in antigenic structure. Accordingly, it is noted that more recent strains of both the influenza A<sub>2</sub> and B strains have been added to the vaccine. The antigenic composition of the vaccine for the 1963-1964 season is as follows:

		CCA Units
Type Strain		per cc
A	PR8	100
$A_1$	Ann Arbor 1/57	100
$A_2$	Japan 305/57	100

$A_2$	Japan 107/62	100
В	Great Lakes 1739/54	100
В	Maryland $1/59$	100
		600

Dose and Schedule of Vaccination by Age:

- 1. Adults and Children over 12—Those not immunized during or since 1957 should receive a 1.0 cc (600 CCA units) dose subcutaneously as soon as practicable after September 1 and a second 1.0 cc dose about two months later. Those given at least one dose of vaccine since 1957 should receive a single booster dose of 1.0 cc subcutaneously.
- 2. Children 6 to 12 Years Those not immunized during or since 1957 should receive a 0.5 cc (300 CCA units) dose subcutaneously as soon as practicable after September 1 and a second 0.5 cc dose about two months later. Those given at least one dose of vaccine since 1957 should receive a booster dose of 0.5 cc subcutaneously.
- 3. Children Three Months Through 5 Years of Age—Those not previously immunized should receive 0.1 to 0.2 cc (60 to 120 CCA units) of vaccine subcutaneously on two occasions, separated by one or two weeks. A third inoculation of the same strength should be given about two months later. Those who have received at least one dose of vaccine previously should receive a single dose of 0.1 to 0.2 cc subcutaneously. Since 20 per cent or more in this age group may experience a febrile reaction to the vaccine, an antipyretic may be indicated.

Previously unimmunized persons ideally should receive a dose of polyvalent vaccine administered subcutaneously followed by a second dose about two months later. Recognizing that this preferred course of immunization cannot or will not always be possible, the Committee pointed out that even a single dose of vaccine can afford significant protection; a second dose given as early as two weeks following the first will enhance this protection.

The implementation of a program for routine annual immunization of those at high risk and in the older age groups is in the hands of the physicians.

A more intensive national and international surveillance program is being encouraged, stressing the importance of obtaining strains and epidemiological data from epidemics wherever they occur on a current basis. The Arkansas State Board of Health will continue cooperation in

this surveillance program with the assistance of the physicians of Arkansas.

The State Hygienic Laboratory does not have facilities or personnel to do routine examinations for identification of influenza virus on all cases or suspect cases, however, they will be pleased to receive some selected specimens from outbreaks in various sections of the State to assist in determining which specific virus is implicated. The Laboratory has provided the following information concerning the collection and submission of such specimens:

Current influenza infections usually can be diagnosed by serologic tests alone, if acute and convalescent specimens are collected at proper time intervals. Collect the first blood specimen as early as possible in the acute stage of the illness. Every effort should be made to obtain specimens while the patient is still febrile. The convalescent blood specimen is collected 2 to 4 weeks later. For serologic tests 10 ml of whole blood or 5 ml of serum is needed. If throat swabs are submitted, they should be placed in a small amount of sterile broth (supplied on request) and delivered to the Laboratory immediately. Material for respiratory viruses should be processed without freezing if possible. If it cannot be delivered within a few hours it should be frozen and shipped on dry ice. Tubes or vials must be sealed in such a manner that the contents are protected from the CO2 gas (from the dry ice). The onset date of the patient's illness and each specimen marked with the date of collection are essential.





# Some of the Newer Studies on Hypertension

By Alfred Kahn, Jr., M.D.

The understanding of hypertension is far from complete. Fragments of information from various research projects fall into place like pieces from a jig saw puzzle. Eventually the whole picture will appear even though the fragment of research look quite puzzling.

Rauwolfia type drugs are widely used in clinical medicine now. Reserpine has been shown to reduce high blood pressure in many patients and has been reported to produce this effect by reducing the catecholamines in various tissues. Mahon & Mashford (Journal of Clinical Investigation, Vol. 42, p. 338, March, 1963) have recently set up an experiment to determine if Reserpine is responsible for the cardio-vascular response of patients who have a circulatory collapse under anesthesia when they have been pre-treated with Reserpine. It was felt by them that Reserpine would deplete the tissue supplies of nor-adrenalin. If Tyramine, which elevates the blood pressure by releasing nor-adrenalin, were given after Reserpine pre-treatment, the blood pressure rise normally expected would not occur. In eight subjects, these authors found that pre-treatment with Reserpine significantly diminished the elevation of blood pressure due to Tyramine injections. It is of incidental interest that it has been postulated that nor-adrenaline in tissue stores may be considered to be in two compartments: A large one which Reserpine depletes, and a smaller one which Tyramine depletes.

Reserpine is not an ideal hypotensive agent due to its side effects as depression, etc. As a result analogues were developed in hopes that the hypotensive effect of Reserpine could be maintained without the presence of side effects. Syrosingopine is a synthetic derivative of Reserpine and has been widely used in clinical medicine.

Shelburne and Orgain (American Journal of Medical Science, Vol. 245, p. 304, March, 1963) have recently compared the relative value of Reserpine 1 mg. per day to Syrosingopine 4 mg. per day after three or more weeks of treatment. On Reserpine, the blood pressure fell; on Syrosingopine the blood pressure was unchanged. According to these authors, this relative of Reserpine seems to be a therapeutic failure when given orally.

Another hypotensive drug currently in wide use is Chlorothiazide. This drug has been tested to see if it alters the effects of non-adtenalin if the subject is first treated with Chlorothiazide. Eckstein, Abboud, & Pereda (Journal of Clinical Investigation, Vol. 41, p. 1578, August, 1962) studied the cardiac output, arterial blood pressure and heart rate in dogs treated with chlorothiazide and then given nor-adrenaline. Dogs given nor-adrenaline without pre-treatment with Chlorothiazide had no increase in cardiac output; if there was pre-treatment with Chlorothiazide, the output did increase suggesting the cardioregulation reflexes may have been changed by chlorothiazide. Blood pressure increases and stroke volume increases by nor-adrenalin usually stimulate the caroted and aortic arch baroreceptors and cause reflex brady cardia. The authors report after chlorothiazide, this reflex was significantly reduced. Stroke work of the heart was increased after nor-adrenalin injection in chlorothiazide treated animals. Blood pressure can be increased by nor-adrenaline in both dogs treated with chlorothiazide and in dogs without chlorothiazide treatment; the mechanism of increase in the treated dogs seems to be increased cardiac output whereas in the untreated dogs it is probably due to increased peripheral resistance. These authors concluded "chlorothiazide reduced the responses of peripheral blood vessels to the vaso-constrictor effects of nor-epinephrine. It also modified the effect of nor-epinephrine on heart rate and cardiac output. The data suggests chlorathiazide alters the sensitivity of cardioregulatory reflexes."

The association of pyelonephritis to hypertension has recently been investigated by Jones and Shapiro (Journal of Clinical Investigation, Vol. 42, p. 179, February, 1963) in rats made acutely hypertensive with nor-adrenalin and angiotensin II; both of these substances are very strong pressor agents and of the two, angrotensin has a much stronger effect. The infecting agent used in these experiments was E. Coli. In the rats made acutely

hypertensive, E. Coli type of pyelonephritis was produced in a statistically significantly larger group than in normotensive rats challenged with E. Coli, these experiments led Jones and Shapiro to conclude that the important feature producing increased susceptability was the alteration in renal blood flow. In other words, angiotensin and nor-adrenalin decrease renal blood flow and increase vascular resistance. It is postulated the bacteria are thus trapped longer in the kidney and have a better chance to escape into the kidneys interstitial spaces.

These few studies reflect some of the information obtained about hypertension through the use of drugs and biological substances.



#### White County Medical Society Donates Grant

The White County Medical Society has donated a grant to the University of Arkansas Medical Center to finance virological research.

The grant, totaling \$6,816.72, represented excess contributions made this year to the county's polio oral immunization program. The gift was made through Dr. Hugh R. Edwards, Searcy chairman of the Sabin Oral Polio Vaccine Program in White County.

Dr. Winston K. Shorey, Dean of the School of Medicine, expressing thanks on behalf of the Medical Center, said the fund would provide "great impetus" toward getting a program in virology underway.

Dean Shorey said the Medical Center hopes to have a research laboratory staffed and equipped by next July.

#### Little Rock Physicians Won Certificate of Merit

A scientific exhibit prepared by a group of Little Rock physicians won a certificate of merit as the outstanding presentation in the Dermatology Division at the American Medical Association convention this summer.

The exhibit, depicting the gangrenous bite of the North American brown spider, was devised by Dr. Calvin J. Dillaha, Dr. G. Thomas Jansen, Dr. W. Mage Honeycutt, Dr. Carson R. Hayden and Garett D. Cowsert with the assistance of the medical arts departments of the University Medical Center and Veteran's Administration Hospital.

# Arkansas Doctors Receive Chest Physician Certificates

Certificates of Fellowship in the American College of Chest Physicians were conferred upon 275 physicians during convocation ceremonies at the 29th Annual Meeting of the College in Atlantic City.

Nearly 800 physicians, their wives and guests attended the impressive ceremony on Sunday, June 16th. The meeting, held June 13-17 at the Ambassador Hotel was attended by 1,821 physicians and guests.

Physicians from Arkansas who received certificates were:

Phillip T. Cullen, Little Rock.

The College is an International society with nearly 8,000 members in 89 countries and territories throughout the world. Mr. Murray Kornfield, Chicago, is Executive Director.

# Young Little Rock Doctor Wins Vanderbilt's Highest Award

Dr. Willis E. Brown, Jr. son of Dr. and Mrs. Willis Brown of Little Rock, has received the Founder's Medal of Vanderbilt University, the highest award granted by the Nashville, Tennessee institution. The medal is presented for "first honors in the School of Medicine."

Dr. Brown, whose father is head of the Department of Obstetrics and Gynecology of the University of Arkansas School of Medicine and well known in Hot Springs, was graduated from the medical school in Nashville June 2 and will serve a straight internship in the surgery department at Vanderbilt.

He is a cum laude graduate of Little Rock's Central High School and received a bachelor of arts degree cum laude from Vanderbilt. He is a member of Phi Beta Kappa and Alpha Omega Alpha, both honor societies, and in 1961 won the

ANSWER-What is Your Diagnosis?

Diagnosis: Gout.

X-Ray Features: There are lytic punched-out defects on the medial side of the metatarsal phalangeal joint of the great toe. These are mainly on the metatarsal side of the joint. The cortex is eroded. The tophi contain no calcification and, indeed, calcification is unusual. Note particularly that there is no disuse osteoporosis of the foot. Since between exacerbations the patient is relatively free of pain, no osteoporosis has developed.

Roche Award for the student with the highest scholastic average during the first two years in medical school.

#### Fifty Years of Service to Fellow Man Honored by Medical Schools

Dr. O. H. Clopton was recently honored at the Fifty Year Reunion of the 1913 graduating class from the Vanderbilt School of Medicine. The celebration was held at the Richland Country Club in Nashville.

Dr. Clopton, who is a resident of Rector, Arkansas, has been even further honored by the citizens of his community declaring July 8-13 "Dr. O. H. Clopton Week."

Dr. Clopton has observed and participated in the great advancement of the science of medicine in the past 50 years and can say confidently that the child born today is indeed blessed with the promise of a long, healthy and happy life due to expanded knowledge of medicine.

#### Arkansas Physical Fitness Program Rates High in United States

The physical fitness program in Arkansas' public schools is far ahead of most states, more than 70 delegates to the annual Petit Jean Health Education Workshop at Mather Lodge have been told.

The organized effort started under the Eisenhower administration and has been expanded

#### ANSWER-Electrocardiogram of the Month

RATE: 85 RHYTHM: Atrial tachycardia, rate 170, with 2: 1 block.

PR: - Sec. QRS: .08 sec. J QT: .34 sec.

INTERPRETATION: Abnormal. Paroxysmal atrial tachycardia, rate 170, with 2: 1 block. Left ventricular hypertrophy. Digital is effect (?).

COMMENT: This arrhythmia has been seen more commonly recently and is one of the examples where an ECG can detect conditions not readily evident clinically. In this instance temporarily withholding digitalis was efficacious.

under the Kennedy administration. And the emphasis will continue, according to state physical fitness experts.

The workshop was conducted by the State Education Department and the State Health Department to explore and evaluate what has been done in promoting health education in Arkansas schools, and what can and should be done.

#### Dr. Charles H. Barnes Speaks to Civitans

Dr. Charles H. Barnes, an El Dorado physician, spoke as guest speaker at a meeting of the Civitan Club Thursday, June 6 at the Rufus Garrett Hotel in El Dorado.

Dr. Barnes, who was born in Nashville, Tennessee, grew up in Little Rock where he received his secondary education.

Following four years service in World War II as a military pilot, he entered the University of Arkansas where he earned a BS degree. He graduated from the University of Arkansas School of Medicine in June 1952. He completed a rotating internship at Walter Reed Army Hospital at Randolph Field, San Antonio, Texas.

Completion of this training was followed by a tour of duty as a USAF flight surgeon, working extensively with the 26th Squadron of the Air Sea Rescue Service, based in the Panama Canal Zone.

Upon release from his second tour of military duty, Dr. Barnes took special training in surgery at the University of Arkansas Medical Center from July 1956 through July 1961.

After leaving the medical center Dr. Barnes worked with an orthopedic surgeon before locating in El Dorado in 1962 joining the late Dr. P. J. Trinca in the practice of surgery.

#### Dr. Robins Tells About AMA at Lions Club

"Most of the activities of the American Medical Association are scientific in nature," Dr. R. B. Robins, one of the nine Trustees of the AMA, told the Lions Club Wednesday, June 26.

Dr. Robins had just returned from the annual meeting of the AMA at Atlantic City where 15,000 physicians were in attendance and where Dr. Robins' new book entitled "The Environment of Medical Practice" was on display. He chose one of the chapters in his book entitled "Medical Organizations and Their Purposes" as the basis for his talk to the Lions Club.

The annual meeting of the AMA is the largest

of all medical meetings and is designed to keep the physician in step with medical progress. Medical progress is so rapid that the average physician has a task to keep in step with advances, but by attending the annual AMA meeting he is offered the opportunity, Dr. Robins said, to keep himself up-to-date and give his patients the benelit of current knowledge in medicine.

Dr. Robins pointed out that the AMA publishes the leading medical journal in the world, ten specialty journals, a biweekly medical newspaper and a magazine for the public called "Today's Health." He also pointed out that the AMA has rendered great service to the country by regulating and raising the standards of medical education in medical schools and raising the standards of patient care in the hospitals by establishing high standards of health care.

The speaker pointed out some significant information such as:

- (1) The average physician spends 12 percent of his working time giving free service to needy people. (1 billion dollars a year free.)
- (2) Patients get more for their medical dollar than at any time in history. Hospital stays are shorter than 20 years ago.
- (3) Eighty percent of the drugs used today were unknown 10 years ago. Medical research in the United States has discovered more important drugs than all the rest of the world.
- (4) People spend more on liquor and tobacco than they do on health care.
- (5) Voluntary health insurance coverage of the population is increasing by leaps and bounds. More than half of the old people in the country have some form of health insurance policy

#### **Doctor Caffery Talks to Exchange**

"The Role of the Modern Hospital in the Community" was the topic of an informative address by Dr. Eldon L. Caffery, chief of staff of St. Bernard's hospital before Jonesboro Exchange Club members Friday, June 8 at Hotel Milner-Noble in Jonesboro.

He explained that hospital services at St. Bernard's have expanded and have been improved tremendously in the past several years, and are still being bettered. For this increased expansion of service to the people of the area he cited reasons for rises in cost.

"One of the lacts of life," he said, "is that if we

have a service available we must be expected to pay for it." He pointed out that there are two employees required for each patient in a modern hospital adding that the average hospital census for last year was 143 patients and that employees on the payroll average 286. Unlike in most businesses, employees at a hospital must be on duty 24 hours a day, he said. Dr. Caffery also pinpointed other increased costs, such as modern, new and necessary equipment for the various departments, among them the X-ray and surgery department. He explained that proportionately hospital patient costs have increased no more than many other services and products, and not as much as some.

Dr. Caffery introduced Odare Murphree, one of the three medical technologists at the hospital who addressed the audience, describing his work in aiding the physicians, and told of schools and training programs currently in progress at the hospital. He specifically described the training program for medical technologists and explained the rigid requirements students must meet. He also said that there is a great demand over the country for medical technologists and that the hospital personnel welcome the opportunity to discuss this field with interested young people.



# American Thoracic Society Invites Submission of Papers

The Medical Sessions Committee Invites Submission of papers on all scientific aspects of Tuberculosis and Non-tuberculous Respiratory and Cardio-Pulmonary Diseases for presentation at the 1964 annual meeting in New York City, May 25-27. Membership in the Society is not a prerequisite to participation on the program.

Abstracts of papers should be submitted before January 6, 1964, to the Chairman of the Medical Sessions Committee. Abstracts of papers from investigators outside the United States will be most welcome provided they are in English and are submitted with the understanding that all papers accepted must be presented in English at the

Annual Meeting. All abstracts will be reviewed by the Medical Sessions Committee. Selection will be largely based on the areas of interest suggested by you and others receiving this invitation. Reports of interesting or unusual cases will be considered for inclusion in case conferences.

Authors will be notified by February 10, 1964, if their papers have been accepted for presentations. Abstracts selected for presentation at the Annual Meeting will be published in the American Review of Respiratory Diseases. Medical papers presented at the meeting may be submitted to the Review by the author if he so desires for publication after the Annual Meeting.

Papers presented at the annual meeting must be original contributions, not previously presented or published. Limit abstracts to 300 words including important data and conclusions. Eight copies are required for distribution to committee members. All copy should be typed double-spaced and centered on page with 1" margin on each side. Type the title of the paper on all pages. Number pages consecutively. Charts and tables should be attached to aid in the selection of papers. Spell out a term the first time it is used, followed by its abbreviation in parentheses-e.g. maximal ventilatory flow (MVF). After that it may be abbreviated throughout. Type the names, most important academic degree and title and complete addresses of the senior author and any co-authors in the upper left corner of the first page.

#### **Buffet Dinner Planned for Alumni**

The Hotel Monteleone in New Orleans will be the scene of a buffet dinner for the University of Arkansas Medical School Alumni on Tuesday, November 19, 1963.

# Doctor Completes 25 Years' Practice in Batesville Area

Dr. Finis Q. Wyatt completed 25 years of service and practice in Batesville and vicinity the last week of June.

Dr. Wyatt came to Batesville in June of 1938 and set up offices on Broad Street near his present location at the North Arkansas Clinic.

He served his internship at Morningside Hospital in Tulsa and his residency at the Fred Roberts Memorial Hospital in Corpus Christi, Texas.

Dr. Wyatt, well-respected general practitioner, is a fellow in the International College of Sur-

geous. He is married to the former Miss Virgiuia Harrington of Arkadelphia. They make their home in Batesville.

# Dr. Fred J. Kittler Joins the Cazort-Johnston Allergy Clinic

Dr. Alan G. Cazort, Dr. Thomas G. Johnston, Dr. Purcell Smith, and Dr. Bill F. Hefley proudly announce the association of Fred J. Kittler, M.D. for the practice of allergy at Cazort-Johnston Allergy Clinic at 4001 West Capitol Avenue; Little Rock, Arkansas.

# The Endocrine Society's Fifteenth Annual Postgraduate Assembly Will Meet

The Fifteenth Annual Postgraduate Assembly is being held in New York City from September 30 to October 4, 1963. The Assembly will convene at the Medical Students' Residence Hall (Bard Hall) of the Columbia-Presbyterian Medical Center. Recent advances in all phases of Endocrinology and Metabolism will be discussed by a distinguished group of experts. The course will consist of formal presentations, panel discussions, case presentations and question and answer periods.

#### 1964 Sectional Meetings of the American College of Surgeons

January 27-29 — Baltimore, Maryland — Lord Baltimore Hotel

February 17, 18, 19—Denver, Colorado—Denver Hilton Hotel

March 16-19—New Orleans, Louisiana (annual four-day meeting for surgeons and graduate nurses)—Roosevelt and Jung Hotels and auditoriums of Charity Hospital, Louisiana State University and Tulane University.

50th Annual Clinical Congress: Chicago, Illinois, October 5-9—Conrad Hilton Hotel

#### The District Medical Society Will Meet in Camden

The District Medical Society will meet in Camden at the Camden Hotel Tuesday night, October 22nd, in a dinner session. Dr. E. B. D. Neuhauser, Radiologist-in-Chief at the Children's Hospital Medical Center in Boston, Massachusetts, will speak on "Infections and Obstruction of the Lower Urinary Tract." Radiologists and urologists from over the state of Arkansas are urged and invited to attend this meeting and hear this famous pediatric radiologist speak on this subject.

# Annual Course in Postgraduate Gastroenterology

For 1963, the American College of Gastroenterology is again offering a course in Postgraduate Gastroenterology to be given at the Shoreham in Washington, D.C., on 24, 25, and 26 of October, 1963, immediately following the 28th Annual Convention to be held at the same place on 21, 23, 24 October 1963.

Returning to serve as Medical Co-ordinator will be I. Snapper, M.D., Ph.D., F.A.C.G. (Hon.), Director of Medical Education, Beth-el Hospital, Brooklyn, N.Y. As the Surgical Co-ordinator will be Robert J. Coffey, M.D., M.S. (Med.) Ph.D. (Surg.), Professor of Surgery and Chairman of the Department of Surgery, Georgetown University School of Medicine, Washington, D.C. The Faculty for the Course will be selected from the medical Schools in and around Washington.

The subject matter to be covered in the Course, from a medical as well as surgical viewpoint, will be, essentially, the advances in diagnosis and treatment of gastrointestinal diseases and comprehensive discussion of diseases of the esophagus, stomach, pancreas, spleen, liver and gallbladder, colon, and rectum.

All of Thursday afternoon will be spent at the Mount Alto Veterans Hospital, where in addition to several individual papers to be presented, those taking the Course will be afforded the opportunity of touring the Research Laboratories by groups.



#### **Death Took Prominent Physician**

Charles Blaine Dixon, well-known physician of Van Buren, died at his home, 1200 Cherry Street, Saturday, June 29, after a long illness. He was 77 years old.

He was born in Arkansas, the son of Alexander and Mahala Jackson Dixon, natives of Kentucky. He was educated in Arkansas and practiced his profession at Decatur, Arkansas, before going to Van Buren in 1943.

He was a member of the Arkansas Eclectic

Medical Association, American Medical Association, Arkansas Medical Society, Masonic Lodge of Decatur. Scottish Rite Bodies of Fort Smith, Crawford County Medical Association, the First

Presbyterian Church, a staff member of the Missouri Pacific Hospital Association for a number of years and he was also a 32d Degree Mason.



#### PERSONAL AND NEWS ITEMS

#### First Resident in Division of Dermatology

The first resident in the Division of Dermatology of the School of Medicine completed his three-year training period in July and is entering private practice at Fort Smith, Arkansas.

Dr. A. C. Bradford, who was graduated from the University of Oklahoma School of Medicine, entered the new dermatology program from private practice in Lindsey, Oklahoma.

He will be associated in Fort Smith with Cooper Clinic and Dr. Davis Goldstein.

Five residents presently are enrolled in the three-year traineeship, which is served at University Hospital and Veteran's Administration Hospital in Little Rock.

#### **Doctor Laney Heads Hospital Medical Staff**

Dr. J. Neal Laney was elected chief of the medical staff of Forrest Memorial Hospital at its election Monday night, June 17 at the hospital.

He succeeds Dr. G. A. Sexton and will serve through June 30. He will preside at the monthly meeting of the medical staff which supervises the medical performance in the hospital and makes recommendations for improvement in patient care.

Other officers elected were Dr. C. E. Crawley, vice chief of staff; Dr. George T. McPhail, secretary; Dr. J. Max Roy, chief of medicine; Dr. Harold N. Cogburn, chief of surgery; and Dr. G. A. Sexton, chief of obstetrics.

Dr. E. M. Collins and Dr. A. M. Bradley were elected members of the executive committee.

# The Ouachita County Medical Society Met July 9th

The Ouachita County Medical Society met in regular monthly dinner session Tuesday night, July 9th at the Camden Hotel in Camden. Dr. E. Easley of the State Health Department spoke on "The History and Work of the Arkansas State Health Department."

# Dr. John F. Guenthner Affiliated With Mountain Home Clinic

Dr. John F. Guenthner, physician and surgeon who has practiced many years in Arkansas, has announced his affiliation with the Saltzman Clinic and Hospital in Mountain Home, Arkansas.

Dr. Guenthner has practiced in Arkansas since 1936. Before coming to Baxter County, he completed a one-year internship at West End Hospital in Chicago, Illinois, followed by a surgical residency of four and one-half years.

He is president of the Baxter County Medical Society, a member of the Arkansas Medical Society, the American Medical Association, the American Society of Abdominal Surgeons, a member of the Arkansas State Medical Board of Medical Examiners, the World Medical Association, a Fellow of the Federation of Medical Boards of the United States, and was recently appointed by the president of the Arkansas Medical Society as a member of the subcommittee on Mental Health.

The local institution with which he is affiliated will be known as the Saltzman-Guenthner Clinic and Hospital.

#### **Orthopedic Surgeon Gets Dimes Office**

Dr. Walter G. Selakovich; 5700 West Markham; Little Rock, Arkansas, an orthopedic surgeon, has been elected chairman of the medical advisory committee of the Pulaski County chapter of the National Foundation March of Dimes.

Dr. Theo C. Panos, professor of pediatrics at the University of Arkansas Medical School, is the new vice chairman. Dr. Selakovich is chief of orthopedics at Arkansas Children's Hospital and an assistant clinical professor at the U of A Medical School. Chapter Chairman Fred Balch, Jr. said the following had been named to serve on the medical advisory committee:

Dr. Panos, Dr. Deane G. Baldwin, Dr. Travis Crews, Dr. James L. Dennis, Dr. Austin Grimes, Dr. Frank Padberg, Dr. James Sloan, Dr. Mose Smith III, Dr. James G. Thomas and Dr. G. Max Thorn.

The responsibilities of the medical advisory committee, according to Balch, are to serve as a link between the chapter and the medical profession, to recommend special consultants as required; to advise on treatment facilities available, to sponsor educational programs for professional groups and to advise on unusual medical services costs.

#### Dr. F. M. Duckworth Celebrated His Ninetieth Birthday June 30

Dr. F. M. Duckworth observed 90 full years of life on Sunday, June 30. He is one of nine children (who grew to adulthood) born to L. L. and Lavina Gunter Duckworth. He was born in the house just north of the "Gunter House" on East Tahlequah, in Siloam Springs, Arkansas. There are still three children living — Dr. Duckworth, Mrs. W. C. Gibson of Norman and Rob Duckworth of California.

After graduating from Medical School at Washington University in St. Louis, Mo., in 1897, he opened his practice in Claremore, Oklahoma. There he met and married Zoe Bullette. Doctor Duckworth continued taking courses in specialization in New Orleans, U.L.L.A., and New York. During his years in Oklahoma, he practiced during the horse and buggy days where roads were almost non-existent. It was also during this period that he became organizer and counselor for Medical Associations in nine Oklahoma counties, including Rogers, Wagoner and Tulsa counties.

The Duckworths moved to Siloam Springs in 1907 where the Doctor set up his office in the Chandler Building and maintained it there until 1955 when he retired. Even after his formal retirement, he continued to treat some of his old patients from his own home. When he first came back to Siloam Springs in 1907, he stayed in Dr. J. F. Clegg's office so Dr. Clegg could go on two weeks vacation.

Dr. Duckworth probably knows more "pioneer" families than any person living in Arkansas today.

#### Seminar Held at Magnolia

Dr. Betty Lowe of Texarkana and Dr. Russell Walling of San Antonio, Texas, were the guest speakers at a post graduate seminar in Magnolia June 26 sponsored by the Arkansas Academy of General Practice.

The meeting was held in the Magnolia Inn Hotel.

Subjects discussed at the meeting were related to the fields of Pediatrics and Psychiatry. Dr. John E. Alexander was in charge of the local arrangements.

All doctors of medicine were invited to attend, and special entertainment was planned for the doctor's wives.

#### Doctor R. H. Nunnally Opens Office at Sparkman

Dr. Robert H. Nunnally, announced the opening of his office at the Sparkman Clinic in Sparkman, Arkansas, which started June 10th, 1963. Dr. Nunnally, a native of Lester, Arkansas, obtained his pre-medical training at Tulane University in New Orleans, Louisiana, and received his medical degree from the University of Arkansas School of Medicine in 1958.

Dr. Nunnally served a rotating internship at Lackland Air Force Hospital, San Antonio, Texas. He later served as Chief of the Family Clinic there. He transferred to Amarillo Air Force Base Hospital, Texas in June 1960. He served in the departments of Obstetrics and Gynecology, and Pediatrics, each for one year. He is a member of the Association of Military surgeons of the United States and of the American Academy of General Practice.

# Dr. Hugh Edwards Named to Office on Medical Board

Dr. Hugh R. Edwards was elected vice-chairman of the Arkansas State Medical Board at a meeting held June 13 at Hotel Marion, Little Rock.

Other officers are Jeff Baggett, M.D. of Prairie Grove, chairman: Joe Verser, M.D., Harrisburg, secretary and treasurer.

Other board members are: Frank M. Burton, M.D., Hot Springs; G. D. Murphy, Jr., M.D., El Dorado; Wm. A. Snodgrass, Jr., M.D., Little Rock; H. J. Hall, M.D., Clinton; Earle D. Mc-Kelvey, M.D., Paragould; John F. Guenthner,

M.D., Mountain Home. Eugene R. Warren, Little Rock, is the attorney.



# Mrs. Glenn Keller Is Business and Professional Women's Club Speaker

Mrs. Glenn Keller, president of the Woman's Auxiliary of the Arkansas Medical Society and a member of the local Business and Professional Women's Club, spoke to the club on the evening of June 12.

Some of the activities of the Auxiliary which Mrs. Keller outlined were: hard work on mental health programs; concentrating now on suicide prevention and the methods of detecting potential suicide cases; recruiting young people to enter medical services—doctors, nurses, technicians, etc; the Auxiliary's Education and Research Foundation, which is a guaranteed loan service for medical students; offering medical self-help courses to civil defense groups; offering safety programs to any interested groups; international health activities, which include collecting drugs and all types of medical equipment to be sent to underprivileged areas in other countries.

Mrs. Keller also discussed socialized medicine and what it means to the patient, and stressed that each individual must distinguish fact from fiction in connection with his own health and the health of his family.

Mrs. Whitfield Bilyeu, president, presided at the business meeting.



#### **BOOK REVIEWS**

Cecil-Loeb TEXTBOOK OF MEDICINE, Eleventh Edition, edited by Paul B. Beeson, M.D., Ensign Professor of Medicine, Yale University School of Medicine, and Walsh McDermott, M.D., Livingston Farrand Professor of Public Health, Cornell University Medical College, pp. 1835 with index, illustrated, published by W. B. Saunders Company, Philadelphia and London, 1963.

This textbook of medicine has become the standard for all books on this subject. It is an outstanding compendium of medical information now under the editorship of Drs. Beeson and McDermott. This text is now 1835 pages without listing the index. Despite this, the rapid pace of medicine forces the individual articles to be rather short and terse. Various systems are written by different authorities, all of them outstanding in their respective fields. This book is recommended as being the best current textbook of medicine for the medical student and general practitioner. It is a handy reference for other physicians. AK

RESULTS OF SURGERY FOR PEPTIC ULCER, a Cooperative Study of Twelve Veterans Administration Hospitals, edited by R. W. Postlethwait, M.D., pp. 308, published by W. B. Saunders Company, Philadelphia and London, 1963.

This is an interesting text pertaining to the surgical therapeusis of peptic ulcer. It contains numerous charts and graphs and has a highly interesting text. It is of limited value to all except gastroenterologists and surgeons; to these latter groups it is heartily recommended. AK

PEDIATRIC CARDIOLOGY, Second Edition, by Alexander S. Nadas, M.D., F.A.A.P., Associate Clinical Professor of Pediatrics, Harvard Medical School; Cardiologist, The Children's Hospital; Physician, Sharon Cardiovascular Unit, Children's Hospital Medical Center, Boston, Illustrated, pp. 828, published by W. B. Saunders Company, Philadelphia and London, 1963.

Pediatric cardiology has become a disease of major importance, principally due to the imports given it by pediatric cardiac surgeons such as Gross and others. Nadas has published an excellent text on pediatric cardiology which should be of great interest to the profession. It will be of principal interest to the house officer, pediatrician, internist and pediatric surgeon. The book is well written and easy to read. There are a moderate number of diagrams. There is a bibliography of 766 references. The text discusses three main things: Diagnosis and the methods used in diagnosis, acquired heart disease and congenital heart disease. This book is highly recommended to those interested in this subject. AK

# 4

#### ABSTRACTS

Sponsored by Arkansas Tuberculosis Association

# TUBERCULIN TESTING OF SCHOOL CHILDREN

TUBERCULOSIS

Because it was believed that tuberculin testing of selected age groups in elementary schools would furnish useful clues to foci of infection, a testing program was undertaken in 1957 and 1958 under the joint auspices of the Tuberculosis and Health Asociation of California, the California State Department of Public Health, the California Conference of Local Health Officers, and the United States Public Health Service.

The intradermal Mantoux test with 5 T.U. (0.1 ml. containing .0001 of PPD-S) was used. A positive test was one with induration of 6 mm. or more. The term "Ladino" was used to identify children of Latin American or Spanish background.

Of 123,934 elementary school children enrolled in 399 schools in eleven selected areas of California, 109,152 were tuberculin tested at least once. The study group consisted of 85,751 students available for testing both years in ten areas, and of these 54,051 completed both tests.

#### STUDY FINDINGS

The authors' findings and conclusions from these studies were:

- 1. The Mantoux test, when done competently, offers a most acceptable guide for follow up and cae finding. Testing errors occurred for many reasons but did not invalidate the significance of the observed conversions and reversions.
- 2. When the ten study areas were ranked as "high" or "low" by reported morbidity rates, the percentage of positive tests the first year followed the same general pattern as the reported morbidity rates. Positive reactions occurred in 11.1 per cent of Ladino students, in 4.5 per cent of Negroes, in 5.3 per cent of other nonwhite students, and in 2.1 per cent of the remaining white students. The positive reactors varied from 0.96 per cent at

HENRIK L. BLUM, M.D.; FRANK E. HESSE, M.D.; GLEN W. KENT, M.D.; and Dalrie S. Lichtenstiger. *The American Review of Respiratory Diseases*, February, 1963.

age 6 to 4.61 per cent at age 14.

- 3. Population density or degree of urbanization did not appear to be signficantly related to incidence of tuberculin sensitivity.
- 4. The frequency of positive reactors and the degree of sensitivity as represented by size of reaction are related to the frequency of exposure to *Myobacterium tuberculosis*. Rates of conversion and levels of infection in the schools paralleled incidence of active disease in the community. The rate of conversion accelerated markedly as age increased. This explains the rapid overall increase in prevalance of positives with increasing age in the 6-to-14 year age group tested. In the Ladino group, girls showed more acceleration than boys and higher levels of sensitivity at each age tested.
- 5. The rapid rise in conversion rates as well as of prevalence observed with increasing age at the elementary school level is best accounted for by casual exposures to older persons outside the home, the circle of such contacts enlarging with the freedom from the home environment that occurs with increasing age.
- 6. The frequency of reversion was inversely related to reported morbidity rates and to prevalence of tuberculin sensitivity. It occurred most frequently in the lower ages, in communities with low morbidity rates, in white students other than Ladino, and among males. Reversion also occurred most frequently among those with smaller tuberculin reactions, which were in turn most frequent among the groups with lower prevalence of tuberculin sensitivity.
- 7. The distribution of reaction sizes was consistent with the theory that frequency of exposure to infective does of *M. tuberculosis* is related to the prevalence of positive skin reactors, to the frequency of conversion and clinical case morbidity rates, and that it varies inversely with frequency of reversion.

Susceptibility to clinical disease during elementary school ages (6-14 years) is no less frequent

than among older persons, provided account is taken of the infected population at risk.

#### SMALL INDURATIONS

- 8. Small indurations give rise to an undue proportion of positives in a subsequent retest. This may also be true for reactions as inconsequential as "erythema only".
- 9. Recent converters (0-12 months) make up a significant proportion of positive reactors at ages 6 through 14.
- 10. Follow-up case-finding activities were recorded and the data made available to the study from two areas. In one area where 19,987 children completed at least one test, 467 index reactors on field records in 1957 yielded, 1,782 contacts on follow up. Eight new cases were found among these index reactors. Of the 1,782 contacts, 82 per cent received follow-up examinations and 17 clinically active cases were diagnosed. The 1958 follow-up examinations of 83 per cent of the 437 known or new positive reactors on field records yielded five new active cases, all new positive reactors. Of the 1,713 household and close contacts examined (83 per cent), only one new active case was found.

#### NEW CASES AND REACTORS

No cases were discovered among positive reactors or their household contacts when the index reactors had less than 9 millimeters of induration. From a case-finding standpoint, positive reactors found in the first year were more productive of new cases than were those in the second year. However, if one followed only the converters and new reactors in the second year, new active cases discovered would be of the same order of magnitude as was that of all reactors in the initial test year. The small number of cases in both years render these observations tentative.

- 11. The greatest number of leads to cases of tuberculosis will be found among those groups with high morbidity and high prevalence of tuberculin reactors.
- 12. We believe that case finding by tuberculin testing surveys would be most productive and least costly in communities having an annual tuberculosis morbidity rate of over 40, and particularly over 50 per 100,000, and in any groups having over one per cent positive reactors at age 6, three per cent at age 10, or five per cent at age 14. We expect it to be most profitable in schools having more of the higher incidence groups of children, such as ethnic and racial minorities or older ages.



#### Antibody Formation in Hodgkin's Disease

A. C. Aisenberk and S. Leskowitz, New Eng J Med 268:1269 (June 6) 1963

Thirteen of 19 anergic patients with Hodgkin's disease formed antibody to both types II and VII pneumococcal polysaccharide, while 2 formed antibody to only 1 antigen and 4 to neither. Four of the six indiniduals who failed to respond to 1 or both antigens died within 6 months of the antibody studies, suggesting that the failure to form antibody to these antigens is a manifestation of advanced Hodgkin's disease. In five of ten patients the data suggested that antibody formation was not sustained in the same manner as it is in normals.

# Primary Arteritis of Aorta Causing Renal Artery Stenosis and Hypertension

T. J. Danaraj, H. C. Wong, and M. A. Thomas, Brit Heart J 25:153 (March) 1963

Nine patients with primary arteritis of the aorta exhibited involvement not only of the renal

arteries, but of other branches as well. The evidence presented by the 9 cases indicates that primary arteritis of the aorta is a clinicopathological entity of which Takayashu's syndrome is a part, and supports the thesis that primary arteritis of the aorta may affect not only the arch alone, to produce Takayashu's syndrome, but any part of the aorta, the clinical picture depending on which segments and which branches are affected. In this study, the mode of presentation was hypertension consequent on renal artery stenosis. With involvement of renal arteries, prognosis becomes serious because resultant hypertension is severe and leads to premature death. Early diagnosis is important, and surgical treatment is indicated to relieve the hypertension. The removal of a kidney is a simpler and less hazardous operation than procedures to restore adequate renal blood flow, but, when the primary lesion is in the aorta and may progress to involve both renal arteries, some form of arterial reconstruction is to be preferred.

# THE JOURNAL OF THE ARRANSAS MEDICAL SOCIETY

Vol. 60 No. 5

FORT SMITH, ARKANSAS

Sun Prancisco, 25

# The Lente Insulins

- wide range of Insulin activity
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# THE CURRENT STATUS OF DUODENAL ULCER THERAPY

Gordon McHardy, M.D.\*

Delivered at the Annual Meeting of the Arkansas Medical Society, Little Rock, Arkansas, April 23, 1963.

Gastric ulcer and duodenal ulcer are now generally conceded to be separate entities with significantly different genetic characteristics, etiology, pathogenesis, therapeutic responsiveness, and prognosis. The management of patient and disease advocated herein for duodenal ulcer is in part applicable to a benign gastric ulcer; it is not to be concluded, however, that the two lesions should be handled identically.

The exact cause of duodenal ulcer remains obscure. Available knowledge of the gastric secretory mechanism, especially as pertains to the biochemistry of the parietal cell in the active transport of hydrogen, chloride and potassium ions, is incomplete. Developments of interest and importance within the past decade include the revelation through electron microscopy of the morphology of the parietal cell in relation to its exocrine function. The recognition of the plasma proteins, the gastric proteases other than pepsin in various gastric secretions, has created interest in their ulcerogenic significance. The major stimulatory and inhibitory mechanisms for the control of gastric secretion has been ingeniously studied in the experimental animal, with partially confirmatory observations in humans, to establish conclusively the many contributing vagal processes, the humoral processes involving gastrin and histamine, and the inhibitory mechanisms arising in the duodenum. The chemical and physical characteristics of the gastric mucinous secretions are considered to be protective against peptic ulcer. The endocrine ulcerogenic tumors, the serotonin-reserpine complex relationship to gastric hypersecretion, the ulcerogenic potentiality of corticosteroids parietal cell mass, and maximal histamine secretory response have all contributed to our physiologic knowledge of ulcer. These data permit a practical, although incomplete, physiologic therapeutic approach and discount the currently prevalent concept that the end result of both the medical and surgical management of ulcer is merely the natural eventuation of the disease.

Discovery of the precise mechanism of production of ulcer would possibly establish more sound and effective protection in relation to alteration in mucosal resistance, if this single factor is the deciding issue. On the basis of our present knowledge, the other two contributing factors, abnormal secretion and abnormal motility, are obviously etiologically paramount and are susceptible to control in most instances by meticulous therapy. We should, therefore, dedicate our efforts toward a physiologic approach to management which can be rationalized, is practical, and can achieve a favorable prognosis, rather than subscribe to the nihilistic rejection of benefit, the ascription of any improvement to informal psychotherapy, or the scientific interpretation of animal evaluation without benefit of clinical application or experience.

Initiation of therapy implies that we know the patient and the disease, *i.e.*, that the patient has been carefully evaluated as to background, course

<sup>\*</sup>From the Department of Medicine, Louisiana State University School of Medicine and Browne-McHardy Clinic, New Orleans, Louisiana.

of the ulcer, and associated or resultant anatomic, nutritional, physiologic, and psychic changes, as well as presence of related or unrelated diseases. Such investigative analysis should permit formulation of a therapeutic regimen which clinical experience dictates applicable and which can be modified to fit the social, economic and occupational status of the patient. This analytic approach continues to survive the trial of time and the new remedies of many decades, permits the combination of pharmacologic, dietetic, psychotherapeutic, and surgical approach to abnormal secretion and motility, and is most susceptible to physiologic interpretation and accomplishments.

The entire therapeutic program must, however, be directed toward the following practical clinical principles and not toward physiologic laboratory measures of the results:

- 1. Assurance of satisfactory quiescence by management sustained adequately to permit healing of the segment that cannot be put at complete physiologic rest. An ulcer of many years' duration, with scarring and penetration, is an anatomic and not a functional entity. It cannot completely granulate in and epithelialize over in a period of a few weeks or months, if ever.
- 2. Prophylaxis against reactivation by adequate initial therapy and interval intensive management, as indicated, in the presence of greater liability to physical or emotional stress, infection, exposure to ulcerogenic agents, and seasonal factors.
- 3. Retreatment of reactivation as meticulously as of the initial illness, and awareness that recurrence and refractoriness may indicate endocrinopathy. Such occurrences are more prone to complication.
- 4. Recognition, intelligent interpretation, and proper medical or surgical management of complications to prevent chronic debilitation.
- 5. Avoidance of personality conflicts in patient or physician, in which the insight of either may permit the disease, with or without complication, to eventuate in emotional or physical disability or both.

After thorough diagnostic appraisal, the experienced clinician, whose scope of contact with and responsibility to the patient is beyond that of a consultant, will tailor his therapy to the various issues in the individual patient. Sex, age, temperament, and occupation of the patient, the organic status of the disease in relation to complica-

tion and to associated disease, the interplay of psyche and soma, the emotional influences of financial problems, environment, and frustration, all can contribute to physiologic derangement. It is, therefore, requisite that the therapeutic program include certain basic and therapeutically susceptible physiologic considerations.

Decisive factors in the pathogenesis of peptic ulcer that are available for such practical management include:

- 1: Secretion of hydrochloric acid and associated activation of pepsin.
- 2. Gastric motility and emptying, with the accompanying neutralizing, inhibiting, or stimulating influence.
- 3. Mucous secretion, its importance in physical and chemical protection, and its removal by acidification.
- 4. Psychogenesis of stress-induced secretory, motor, and vascular abnormalities.
- 5. Ulcerogenic agents that act by secretory stimulation, mucous depletion, or mucosal damage.
- 6. Endocrinopathies and their susceptibility, presently limited to surgical correction.

The significance of ulcerogenic agents is obscured by their avoidance or by protective activity when their use is mandatory. Admittedly, such phenomena as mucosal vulnerability, host resistance, genetic factors, and blood group association cannot be adequately analyzed. Surgical correction of endocrinopathies or removal of their end organ must be sought. Thus, in the absence of complications, medical management should be concerned primarily with methods of favorably altering gastric acid secretion and motor activity.

The influences on gastric secretion and motility are overlapping, probably inseparable and, in the analysis of their behavior, often seem to be contradictory. A logical discussion of these influences requires brief mention of the more important and best understood phases wherein the contradictory factors become evident.

- 1. The cephalic phase of activity, excited through the vagus by hypoglycemia and emotional reactions, results in gastric hypersecretion and vigorous contraction.
- 2. The gastric phase (antrum-gastrin), stimulated by the presence of food, excites parietal cell hypersecretion and gastric contractions, which have significant influence on evacuation.
- 3. Antral distention or alkalinization, alone or in combination, probably not entirely separable from the gastric phase, is a strong stimulus to

gastric secretion. The fact that antral acidification, despite continued distention, however, does not have such an influence suggests the possibility of a questionable separate mechanism.

- 4. The intestinal phase, hormonal in character, is responsible for less than 10 per cent of the secretory stimulation and may therefore not be of great significance.
- 5. Mucus, the alkaline barrier, provides physical protection by its coating action, chemically binds acid, inactivates pepsin, and is a parietal cell inhibitor. An acid pH seriously hampers its influence.
- 6. Gastric "layering," overlooked in most physiologic discussions, is probably a motor phenomenon whereby the weak contractions of the fundus hold solid foods for acid-pepsin digestion, while liquids, especially if they are cold and hypotonic, move around and beyond the fundus into the antrum. Radiologically, endoscopically, by aspiration, and by intragastric electrodes, layering is demonstrable in the human patient and probably has greater significance than heretofore recognized. The food in the fundus is in the parietal cell area, i.e., at the site of maximal secretion of hydrochloric acid; here digestion, with its concomitant use of acid, takes place. The antral (gastrin) mechanism, on the other hand, continues to be stimulated by alkaline exposure until the digestive process is completed and acid and distention inactivate the mechanism.

#### Physiologic Control of Gastric Secretion and Motor Activity

The acceptable approaches to the control of gastric secretory and motor activity again involve contradictory data and an overlapping mechanism that are probably compensatory.

1. Food.—Whereas all foods are gastric stimulants, they are also neutralizers. Since the usual diet comprises three principal components, carbohydrate, protein, and fat, and since fat has the greatest influence on delaying gastric emptying indirectly by enterogastrone stimulation of suppressing secretion, clinical management should logically include a reasonably high fat content. Ironically, carbohydrates and fats, which are the least stimulating, are also the least neutralizing, and proteins, which are stimulating, are the most neutralizing. Monotony of diet (as in the case of the usual ulcer diet) in animal and human experimentation results in suppression of the cephalic phase of gastric secretion, and adherence

to the unattractive bland diet is therefore justified on this physiologic basis.

Whereas gastric emptying is generally regarded as a rapid action wherein the bulk of food empties early, bulky food actually "layers" and awaits digestion, hypertonic solutions leave slowly, warm liquids are retained longer than are cold liquids, and fats inhibit gastric emptying.

A more current dietary issue is hypercholesterolemia. In a survey of 300 consecutively studied gastrointestinal patients (40 to 60 years of age), 37.2 per cent had a serum cholesterol in excess of 250 mg. per cent. Of 200 patients with duodenal ulcer in the same age group who adhered to a modified Sippy regimen beyond six months, 52 per cent were hypercholesterolemic. These figures may be significant: (a) In matched autopsypatient study, the incidence of myocardial infarcts was twice as high in patients with peptic ulcer who had been treated with a Sippy diet or milk products as it was in either ulcer patients not treated with the Sippy diet or in non-ulcer controls. Such a distribution was common to corresponding groups in the United States and Great Britain. (b) The incidence of myocardial infarcts is higher among persons with chronic peptic ulcers than in those without ulcer. (c) Butter fat has an effect on blood coagulation and clot lysis and influences levels of blood cholesterol in man. It may lead to lipid biochemical alterations conducive to the development of atherosclerosis. (d) Clinical observation has led to skepticism regarding the continued use of the high unsaturated fat diet and to the advocacy of increased unsaturated fat and reduced caloric intake.

The foregoing impressions will require an evaluation period of five to ten years for authentication, but many may retrospectively regret their indifference to a warning favoring a prophylactic attitude toward this aspect of peptic ulcer management.

In all instances, certain obvious dietary facts may be used to advantage:

- a. Any nutritional or vitamin deficiency may be corrected or prevented by adequate nutritional supplement.
- b. Small, frequent feedings lessen the gastric workload while maintaining a better acid-neutralizing content.
- c. Mechanical irritation may be avoided by smooth, soft, or blended food.
- d. Avoidance of the irritation of thermal extremes is desirable.

- e. Proper combination of dietary components of protein, fat, and carbohydrates will avoid any extreme of acid stimulation and achieve delay in gastric emptying.
- f. The supplemental use or replacement of most highly unsaturated fats poor in essential fatty acids should be considered to avoid hypercholesterolemia, increased blood coagulability, and decreased fibrinolysis inherent in "bad" dietary fat.
- g. The severity of the ulcer governs the dietary discipline.
- 2. Anticholinergics.—The optimum effective individualized dosage, although inconsistent in controlling gastric secretion, is an adjunct in altering appreciably, although not entirely, the cephalic phase, gastric phase, and nocturnal secretion. These agents are consistently effective when administered parenterally, are most efficient orally when given on an empty stomach, and are least beneficial when administered immediately postprandially. Regardless of the mode of administration, definite gastric and duodenal atonicity for periods varying from three to twelve hours delays gastric emptying. The duration of action is more consistent for inherently long-acting preparations than for those modified to decelerate release of the drug, but variations occur in the same and in different individuals. In delaying gastric emptying in vitro effectiveness of antacids is achieved in vivo only if the antacid remains in the stomach for a long enough time. The question arises as to whether or not delayed gastric emptying by distention causes antrum stimulation to gastric secretion of hydrochloric acid, and if antacid is present to alkalinize the antrum whether this is not further stimulation.

Further value of anticholinergies lies in the relief of the deep pain of distention or tension in the gastric wall.

Among the newer and more interesting preparations introduced have been poldine methylsulfate (Nacton<sup>®</sup>) †, with a claim for three-hour secretory inhibition of acid and significant delay in gastric emptying, and glycopyrrolate (Robanul®) \*, introduced as a chemically unique "rigid ring" anticholinergic with claims for inhibitory vagal, histamine, and insulin-stimulated secretion.

Among the more challenging products are those of more prolonged inherent action, such as the

well known and widely used oxyphencyclimine (Daricon®),\*\* and a homolog of Darbid®,\*\*\* 2:2-diphenyl-4-N-hexamethylenimine-butyramide methiodide. The latter agent, still under clinical evaluation, has, in my observation, rapid onset of action and sustained effect beyond six hours; it is also remarkably free of central nervous system side effects. Our present study, covering a twelve month period of follow-up examinations in 30 ulcer patients, indicates efficacy in 25 patients and absence of benefit in 5 patients. No significant side effects have been encountered with a dosage schedule of 7.5 grains of the drug given at six to eight hour intervals.

3. Antacids.—Alkalinization of the gastric content protects the mucus, irreversibly inactivates pepsin, and relieves pain produced by nerve endings exposed to hydrochloric acid in the base of the ulcer. Most antacids are admittedly effective in vitro. The problem has been posed, however, that since gastric emptying is considered a relatively rapid action, most antacids are evacuated from the stomach before exhaustion of the agent's action, i.e., within 40 minutes. Secondly, it is contended that whereas an antacid is ideally administered about 60 to 90 minutes after ingestion of a meal, when hydrochloric acid secretion is at its height, this is also the time when, theoretically, acidification of the antrum is maximum and stimulation of the parietal cell therefore ceases.

Quantitatively and qualitatively adequate antacid therapy can, therefore, be accomplished, but methods to retard gastric emptying should be considered a requisite part of their effectiveness. In my clinical and laboratory experience, these methods include: (1) recumbency, since the stomach empties more slowly when the patient is lying and, therefore, periods of semibedrest are desirable postprandially in the acute phases of illness; (2) adequate fats and solids in the dietary program, since these retard emptying and create layering; secondarily, this implies reduction in fluids and carbohydrates, which accelerate gastric evacuation; and (3) judicious use of barbiturates and anticholinergics, which delay gastric evacuation.

The frequency of administration in relation to gastric emptying is generally accepted to be hourly. In the vast majority of patients this accomplishes satisfactory diurnal neutralization. Nocturnal hypersecretor coverage, however, requires at least two administrations at the peak hours of 1:00 and 3:00 a.m., unless an effective, sustained action anticholinergic adequately in-

<sup>†</sup>McNeil Laboratories, Philadelphia, Pa.

\*A. H. Robins Co., Inc., Richmond, Va.

\*\*Pfizer Laboratories, Inc., Seattle, Washington.

\*\*\*Central Pharmacal Company, Seymour, Indiana.

hibits secretion during this period. Reports of significantly low, early nocturnal pH, when there were still food remnants in the stomach, have not been confirmed in my experience. These therapeutic trials, however, were not influenced by antacids and anticholinergics, as were our own.

The choice of antacid is influenced by the patient's approval of its taste, convenience, and cost and by the physician's endorsement on the basis of minimal side effects, such as alkalosis, constipation, and hypercalcemia (Burnett's syndrome). Among satisfactory antacids which avoid the risk of the most significant side effect, alkalosis, are the aluminum hydroxide group, the magnesium trisilicate group, and the combination of the two in liquid and tablet form. The combination effects a compromise of the constipating influence of the aluminum hydroxide by the laxative action of the magnesium compound. Earlier claims made for these products are substantiated by their continued popular and successful clinical application. Various modifications and combinations have been offered, but the only achievement of consequence in my experience has been the creation of a "nonreactive" component of aluminum hydroxide, which, when added to 0.1 N HC1 produces a translucent gel of intensified acid adsorptive and neutralizing characteristics and avoids the untoward conversion to astringent aluminum chloride solution, which occurs when reactive aluminum hydroxide is added to 0.1 N HC1.

The chew tablet form is convenient for ambulatory patients and, in my experience, has been as effective as the liquid, despite the impression to the contrary. Maintenance of two hour gastric secretory pH above 3.9 has been acclaimed for a new, highly polymerized aluminum hydroxide hexitol-complex tablet. This *in vivo* action proved efficient when carried into clinical study.

Suck tablets of aluminum dihydroxyglycinate have the advantage of sustained administration but, in my experience, have not gained acceptance by the patient.

Calcium carbonate in powder combinations and tablets is inexpensive. Powders have lost patient acceptance, however, and tablets are not palatable unless their taste is modified. Significant constipation, renal calculi, and alkalosis are potential side effects.

The sodium content of alumina preparations is significant and should be considered in the treatment of the ulcer patient with concomitant decompensated heart disease.

The agent selected should be understood by patient and physician, and the frequency and timing of administration should be rationalized on the basis of the preceding discussion.

4. Sedatives and Tranquilizers.—The action of these agents on the central nervous system is known. Through control of hostility and anxiety, two principal components of cephalic phase stimulation, these agents can conceivably alter gastric secretion. If administration of tranquilizers, tailored to the patient's specific needs, achieves normalization, then they suppress nocturnal secretion, for the normal individual is not a nocturnal hypersecretor. Yet secretory studies have demonstrated little, if any, influence of these agents on histamine, hypoglycemic, or basal secretory levels.

Among the agents we have evaluated clinically in controlled study are Librium®\* and Elavil®\*\*, the former proving more efficacious in the obviously anxious patient, the latter in the depressive individual. In a current study Quantril®\*\*\* has given promise of efficacy in a comparative evaluation.

5. Gastric Freezing for Duodenal Ulcer.—Carefully monitored gastric freezing by an alcohol coolant circulated through an intragastric balloon is being evaluated as a method of management for duodenal ulcer patients, who, because of intractability to medical management, are considered candidates for surgery. In the selection of patients with duodenal ulcer the complications of obstruction, recent bleeding and recent penetration are probably contraindicative. Gastric freezing for fifty to sixty minutes with an inflow temperature of -17 to  $-20^{\circ}$  C. and a sustained outflow temperature of -8 to -10° C. is, in the University of Minnesota's observation, considered an effective mode of controlling gastric secretion by a threefold mechanism: 1. Vagal responses from the stomach are inhibited. 2. Mucosal changes in the antrum influence gastrin elaboration or release. 3. Parietal and chief cell depression reduces respectively their acid and pepsin secretory capacity.

The acclaimed clinical observation of 82 per cent symptomatic relief, greater than 50 per cent depression in free HCl secretion and ulcer crater healing in two to six weeks is impressive. The procedure, however, is as yet still under evaluation, and not advocated for the uncomplicated duodenal ulcer patient. In our own experience

<sup>\*</sup>Roche Laboratories, Nutley, N. J.
\*\*Merck, Sharp and Dohme, West Point, Pa.
\*\*\*Pfizer Laboratories, New York, N. Y.

we have not been able to confirm significant secretory influence.

- 6. Radiation therapy has a limited group of advocates, primarily from Walter Palmer's Department. From these sources come favorable reports of ulcer healing when achlorhydria is produced for three months or longer. Statistical documentation of these studies indicates no recurrence in 53 per cent of gastric ulcers and 66 per cent of duodenal ulcers. A group of physicians who use Cobalt has recently favored radiation but stressed its use in recurrent ulcer after operation.
- 7. Pepsin Inhibitors.—Inhibition of the proteolytic activity of pepsin has been sought. The actual role of such agents in peptic ulcer management is not determined. In vitro inhibition has been accomplished; in vivo activity is under evaluation.

#### Methods of Preventing Recurrence

The high incidence of ulcer reactivation is frequently cited, with the inference that most therapeutic efforts go for naught as the natural history of the peptic ulcer evolves itself. Many of our therapeutic efforts have been depreciated: Diet, environment, and living habits have been discounted; anticholinergics have not uniformly prevented recurrence; radiation failures have been acknowledged. Time has suppressed enthusiasm for each new therapeutic claim. Excitants of recurrence include: seasonal factors (spring and autumn), occupational conditions, emotional factors, ulcerogenic drugs, trauma, and infection.

Incidence of recurrence can be reduced by observation of the following measures:

- 1. Thorough treatment of the patient with acute ulcer to achieve sustained, complete healing.
- 2. Proper indoctrination of the patient in ulcer management.
- 3. Creation of a normal living pattern for the patient with respect to diet, living habits, rest, occupation, and environment.
- 4. Reversion to the ulcer regimen during recognized seasonal influences, infection, and periods of emotional and physical strain.
  - 5. Avoidance of ulcerogenic agents.
  - 6. Avoidance of allergens.
- 7. Avoidance of unbuffered and especially insoluble salicylates.
- 8. Surgical management of selected patients with confined perforation, cicatricial stenosis, chronic statis without obstruction, and extensive scarring.
- 9. Proper management of related and unrelated concomitant or intermittent diseases.

#### Conclusion

The outlook in long term comprehensive management is optimistic if one approaches therapy practically and physiologically.

NOTE: This article was abstracted from Dr. McHardy's forthcoming book, "The Medical Treatment of Peptic Ulcer," which will soon be published by Charles C. Thomas. If the reader wishes further information, all references cited in this article will also appear in the text of "The Medical Treatment of Peptic Ulcer,"



#### Suicide in Professional Groups

P. H. Blachly, H. T. Osterud, and R. Josslin, New Eng J Med 268:1278 (June 6) 1963

Death certificates in all cases of suicide in Oregon for the years 1957-1961 were reviewed to determine whether the frequency of suicide is higher in some professional groups than others. It was found that the suicide rate among physicians and attorneys was about three times that of white collar workers, whereas the suicide rate of male teachers is about one-third that of male white collar workers. Factors which may contribute to this difference are discussed briefly. Note is made of the marked difference in suicide rates between different states, a difference almost as great as that between the foreign countries having the highest and lowest rates. Be-

cause of this caution is expressed in extrapolating the results from this state to other states without further investigation.

#### Synovial Sarcoma: Review of 25 Cases

 M. Ariel and G. T. Pack, New Eng J Med 268:1272 (June 6) 1963

Twenty-five patients bearing synovial sarcomas treated by the authors between 1950 and 1960 reveal a 5-yr "cure" rate of 29%. The best results were obtained with patients in the older age group and those with the most distally located synovial sarcomas A recurrence rate of 70% following conservative excisions performed elsewhere emphasizes the futility of this procedure Resection of regional lymph nodes should be performed, such metastases occurred to them in 19%.

# ETIOLOGY AND PATHOGENESIS IN PSYCHOSOMATIC MEDICINE\*

Sydney G. Margolin, M.D.\*\*

University of Colorado School of Medicine

ONE OF THE DIFFICULTIES associated with any discussion of psychosomatic medicine is due to a lack of a generally accepted definition. For example, it is customary to state that psychosomatic medicine is based on a point of view in which the physician is more concerned with the patient as a whole, rather than with a circumscribed disease or with pathology dissociated from the patient. Thus we have so-called comprehensive medicine, holistic medicine, hominocentric medicine, to mention a few variants on the theme of psychosomatic medicine. The medical students and the physician are urged to consider a patient's emotional and environmental factors, and to avoid a narrowly limited biological point of view.

In actual practice, however, human psychology and sociology turn out to be complex and highly specialized areas of knowledge which all too often are not included in medical education. A further difficulty is due to the fact that there is not general agreement on the concepts, propositions and theories of these behavioral sciences. Somehow, the principles and laws of human behavior become transformed into exhortations of good manners towards patients.

Naturally, this is the humane, benevolent attitude that should be inherent in the personal ethics required in any profession that directly serves humanity. This morality, however, is very different from an understanding of the ways in which the compassionate and sympathetic practice of medicine can influence bodily processes in health and disease.

I shall not belabor you with a review of the endless controversy over what diseases are to be regarded as psychosomatic. I believe, however, that most of us would agree on the following four classifications:

First) Clinical entities in which more or less tissue pathology can be demonstrated. Examples are peptic ulcer, certain forms of hypertension, ulcerative colitis, asthma, neurodermatitis, and rheumatoid arthritis.

\*Presented April 22, 1963, Arkansas State Medical Society.
\*\*Professor of Psychiatry, Director of Laboratory of Psychophysiology.

Second) Unclassified or unclassifiable signs and symptoms which indicate some malfunction or pathophysiology, usually without fixed tissue pathology. These disturbances are usually described in terms of increased or decreased body functions and pain. Examples are aches and pains in any region or system of the body, constipation or diarrhea, obesity or anorexia, secretory or motor disturbances of respiration and a host of anxious concerns over bodily sensations.

Third) Conversion symptoms in which bodily functions or structures are affected in specific ways by the psychopathology of hysteria. This disease is a psychiatric clinical entity.

Fourth) Hypochondriasis, in which the somatic complaints of the patient are delusional and unrelated to present pathophysiology. This illness is a clinical entity in psychiatry. It may range in severity from a mild form easily influenced by regularly administered reassurance to malignant varieties requiring institutionalization.

I do not intend to minimize the importance of conversion symptoms and of hypochondriasis by excluding them from today's discussion of etiology.

The prominence of unclassifiable disturbances is shown by the estimate that they make up 70%to 80% of patient visits to the offices of general practitioners. Bear in mind that these office visits are for disturbances which of themselves do not add up to a clinical entity, and for which the usual etiological concepts do not apply. That is to say, we are not able to find related infections, injuries, neoplasms, toxic states, metabolic disorders, degenerative or congenital conditions.

Perhaps this inability to establish a conventional cause may in itself have a useful diagnostic significance. It has been shown that 85% of illnesses that are difficult to diagnose or classify are likely to be "psychosomatic" or "psychophysiological."

How can we, then, evaluate these unclassified psychophysiological disturbances if we cannot apply our traditional etiological systems? First of all, we must realize that these concepts of etiology obviously do not fit 70% of the occasions in which patients seek our services. Secondly, if we include the principles of psychophysiology in our diagnostic evaluations, we extend our ability to classify our patients' pathophysiological disturbances.

By psychophysiology I mean a scientific discipline that explains or describes bodily events in terms of psychological laws and principles. We can illustrate this definition by examining the most universal painful state, namely, anxiety. Generally speaking, anxiety is experienced by us every time that we perceive that we are threatened or in danger. I should add that this perception may be limited only to the subjective awareness of anxiety and may not include any tangible reality to which it can be associated.

The anxiety threats may be related to our physical well-being, to our self-esteem and perhaps to our relationships to other people and to our environment. That anxiety is associated with alterations of function of bodily organs in any or all systems of our bodies is part of its definition.

Despite its fascination and importance, I shall not discuss the highly controversial research in the ways in which perceptions of danger are transmitted and expressed as changes in organ functions. Permit me to begin with the fact that this happens and to explore the relationship of this phenomenon to disease.

Generally speaking, when we say that the function of an organ has changed we mean that the function has increased quantitatively, decreased quantitatively, or changed qualitatively. For example, in the disease of peptic ulcer, gastric motility and secretion of hydrochloric acid are increased. In constipation, colonic peristalsis leading to defecation is decreased. In vomiting or regurgitation or peptic esophagitis, the usual functions of the stomach, the cardiac sphincter, and of the esophagus are qualitatively changed in that peristalsis is reversed, and the cardiac sphincter becomes incompetent, thus resulting in a reflux of gastric contents into the esophagus. Needless to say, the principle illustrated in these examples can be widely applied to bodily activity. The effect of drugs can be similarly described in terms of their quantitative and qualitative effects on organ functions, pain, and on psychological and physiological consciousness. A drug, therefore, can increase or decrease the pre-existing pathophysiology. If to the effects of drugs and of the so-called somatic causes of disease

we add the psychophysiological epiphenomena of affects, it is apparent that the signs and symptoms of a patient in treatment is the resultant of these constantly interacting conditions. The psychophysiological epiphenomena, that is to say, the somatic accompaniments of emotions and affects, may therefore increase the pathophysiology of an underlying disease, or may reduce it.

It can be readily demonstrated that the effects of drugs upon pathophysiology can be enhanced or inhibited by these characteristics of affects. It is probably fair to say that the psychophysiology that characterizes depression, with its inhibited psychomotor activity, the loss of self-esteem and feelings of guilt, has profound pathophysiological effects on diseases such as peptic ulcer, ulcerative colitis, neurodermatitis, and rheumatoid arthritis. Similarly, the lifting of such depressions can contribute to the process of remission of these diseases.

These somewhat general thoughts can be summarized as follows:

- 1) Affects, emotions or moods are psychophysiological states which can augment or decrease pathophysiological states.
- 2) The psychophysiological influence of affects, emotions or moods can synergize or antagonize the effects of drugs on pathophysiology.

To elaborate further on the relationship of psychophysiology to pathogenesis, it will be useful to think of the natural history of a disease or of its manifestations in the following two ways:

A) Almost all psychosomatic diseases begin with a so-called "functional" phase. Despite the fact that we are aware of the quantitative and sometimes qualitative alteration of function, we usually cannot identify fixed anatomical, biochemical, or physiological changes. In this phase, the signs and symptoms are transient and they readily remit. As in dyspepsia, mucous colitis, tension headache or migraine, the pathophysiology may just as readily relapse. If there are many relapses, or if the remission does not occur, the tissues of the affected organ may begin recognizable morphological changes. As these progress, the second or "tissue" phase dominates the patient's illness.

Parenthetically, it should be pointed out that although the two phases of a psychosomatic disease are pathogenetically related, they can be regarded as two different diseases, each requiring different methods of observation and treatment. Naturally, it is the second phase which is most

likely to require hospitalization and in which threatening complications are likely to occur. Moreover, in the second phase, the tissue pathology acts as persistent irritant or exciter of the pre-existing pathophysiology and, I might add, of unfavorable affects or emotions.

B) In addition to this two-phase view of psychosomatic disease or of psychophysiological disturbances, the natural history of a given disease is influenced by four sets of factors, namely, the predisposing factors, the initiating factors, the maintaining factors, and the promoting factors.

The set of predisposing factors are constitutional and developmental. In medical practice, the physician becomes aware of constitutional factors in his patient's family history. This survey should not only consist of attempts to find out whether the particular disease of the patient exists in the members of the family, but should also include a searching inquiry as to the incidence of autonomic lability and the presence of other psychosomatic diseases. To fail to do this would be like limiting the inquiry into the family history of a patient with asthma to the incidence of asthma and excluding non-asthmatic allergic tendencies.

The importance of constitutional components is further emphasized by the fact that some functional diseases such as cardiospasm and hypotonic megacolon are often associated with increased or decreased innervation of the smooth muscle of these viscera. After all, there is no reason to expect that all human beings have exactly the same number of ganglion cells and nerve fibers in motor and secretory organs anymore than we assume that all human beings have the same musculoskeletal characteristics and somatotypes. To cite another example of the constitutional problem in relation to a family history, we might look at the disease peptic ulcer. Here we have gastric hypersecretion, hypermotility and pain which may or may not occur with ulceration. Among the members of families of patients with peptic ulcer, one may find an increased incidence of peptic ulceration, some may have a typical dyspepsia without hypersecretion, and others may reveal increased gastric secretory activity without pain or tissue damage. From such data, it might be inferred that if the disease has any basis for inheritance, many different genes are involved and that their different quantitative and qualitative combinations predispose the individual to one of many varieties of gastric dysfunction. The

constitutional predisposing factor, therefor, is clinically manifested by maladaptively increased or decreased responses to stimuli.

If to this predisposition one adds the life experiences or circumstances which arouse the affects whose psychophysiology coincides with the constitutional predisposition, pathophysiological responses can result. This phenomenon of complementary factors in relation to the threshold at which disease appears, is basic for our understanding of the regulation of many complex bodily processes in health and disease, such as temperature and blood pressure. It is obvious, for example, that the greater the allergic tendencies of a given individual, the smaller will be the amount of specific allergen that is required to precipitate the clinical form of the allergic reaction. The application of the principle of interacting complementary factors is basic for any decision as to the management of psychosomatic or psychophysiological disturbances. A given physician's ability to evaluate the complementing series of constitutional, physiological and environmental factors will determine that course of therapy which would be most rational. A heavily weighted constitutional history associated with minimal affective complement logically emphasizes somatically oriented therapy without, however, necessarily neglecting the wise effort to decrease unfavorable psychological influences.

The other predisposing conditions are those inherent in the social, biological, and psychological development of every human being. Most individuals, and this includes physicians, tend to look for an antecedent event to which the outbreak of a given disease or dysfunction can be related. This is a reflex and intuitive effort which is based upon experience. As a rule, such antecedent events are recognizable if they appear to be catastrophic, such as the loss of a loved one, the break-up of an emotionally important situation in one's family life, career, or social situation, or some material deprivation including financial reverses, or perhaps frightening experiences in general. Naturally, one should always wonder and speculate about how it is that a given antecedent event can contribute to the outbreak or relapse of a disease. After all, we know that such antecedent events are not invariably followed by disease in all people. Neither does there seem to be any specifity in the choice of pathophysiology when it does occur.

The catastrophic antecedent events are absent

in many if not most of the psychophysiological disturbances that come to our attention. There are, however, potent circumstances in the life history of every human being in our society which are easily overlooked because we take them for granted. There is a regular sequence of biological, psychological and social developments and changes which every individual must undergo in the course of growth and maturation. Generally speaking, physical growth, emotional development, and social adaptation tend to proceed in fixed ways. For example, the infant is always weaned from the breast or the bottle and must adapt to new foods and to changes in physical relationships with its mother. There is teething, toilet training, and motor maturation leading to the ability to crawl, to walk and run. These developments may be inhibited or facilitated depending upon the mother's anxiousness or expectations that the toddler may or may not hurt itself. In this setting, there may occur the birth of a sibling, or the disabling illness and even death of the mother, or other changes in the family organization. The child learns to control its aggressions and erotic behavior usually by learning that they lead to exceedingly painful physical and emotional consequences. Finally, there comes the time to leave the house and enter kindergarten or first grade. The pediatrician and those general practitioners who treat children very quickly come to recognize that psychophysiological disorders of all sorts are associated with these developmental changes and interactions in the three primary areas of body, mind, and environ-

From this early childhood period we go on to puberty, graduation from school, and to a return of sexuality. We are confronted by increasing demands and requirements for academic, physical, sexual and economic responsibility. It is for these reasons that puberty and early adolescence are so often associated with an immense eruption of psychophysiological disorders. In fact, so well recognized has this become that there is now established the rapidly expanding specialty of adolescent medicine to cover the gap between pediatrics and adult medicine. Marriage, the birth of children, and the further adaptive demands of maturity in social, economic, psycho-sexual and somatic areas are all associated with the changes in the course of which increased susceptibilities may or may not become apparent in the form of psychophysiologic or psychosomatic disease. Each change is a period of transition during which we are more vulnerable to functional disturbances. Perhaps it is this that is at the root of our intuitive search for the dramatic or catastrophic antecedent event.

It is almost a platitude to say that our personalities are shaped by the type of experiences we have had in our early years and by the circumstances of our development and growth. Nevertheless, the various personality theories in which the psychology of a given individual and a given psychosomatic disease are related are based upon this platitude. While these are valuable rediscoveries in medicine, we are far from establishing a precise correlation between a given profile and a given disease. There are too many exceptions to any generalization about personality profiles and moreover, we often find in a given individual more than one psychosomatic disease, each requiring personality correlations which are mutually exclusive. Despite the lack of thorough going scientific validation, however, the physician should not be deterred from associating whenever he can a so-called "typical personality" with a disease such as peptic ulcer. The search for the "typical personality" has the important merit of developing our skills in psychological observation and evaluation.

There is one kind of antecedent event that commonly initiates persistent psychophysiological disturbances. The typical situation occurs when the patient has consciously and voluntarily suppressed certain habitual modes of gratification, or has inhibited the expression of certain character traits. Examples might be the mother or wife who is obliged to suppress her righteous moralistic control of her family. She may develop a host of gastrointestinal disturbances because of rebellious threats to leave her. Certain obese patients become compulsive about the avoidance of food, thus developing anorexia nervosa, or initiating an episode of ulcerative colitis. Individuals who are unable to submit without conflict and frustration to new situations will experience affects associated with anxiety and depression.

Thus, to the constitutional and developmental aspects which make up the predisposition to disease, we must add the set of initiating factors, namely, the catastrophic and inevitable antecedent conditions. Antecedent events exert their influences by means of the affects that are aroused.

In our discussion of the role of affects it should be stressed that it is not only the sympathetic and parasympathetic excitation of the autonomic nervous system that is involved, but that there is also a series of secondary reflex reactions. To be more specific, I believe that no one would disagree with the statement that anxiety tends to take on a typical autonomic configuration. The heart rate accelerates; there is sweating, respiratory difficulty, trembling, changes in salivation and blood pressure, and there may be cerebral anoxia leading to vertigo and syncope. In addition to these involuntary reactions, there are responses under conscious voluntary control that can reflexly initiate further extensive biochemical and involuntary reactions. Outstanding among these is hyperventilation. Over-breathing is a common manifestation of anxiety, sadness, weeping, depression, sighing for any reason, asthma, or excitement, even without unpleasant affective coloring.

Hyperventilation not only produces the familiar alkalosis and hypocapnic tetany, but reflexly brings about a more diffuse sequence of disturbances. First of all, because of the increased intrathoracic negative pressure, a substantial amount of the inspired air is sucked through the esophagus into the stomach. The aerophagia results in abdominal distention, sub-diaphragmatic pressure, flatulence, and belching. In addition, the alkalosis in most individuals is an effective stimulus of vagal activity, often bringing about an increased motor and secretory activity of the stomach. If such a patient has a predisposition to peptic ulcer, his symptoms may develop or an ongoing episode of ulceration may be intensified. The affect leading to hyperventilation and its alkalosis stimulated increased gastric secretory activity which was followed by the typical symptoms of peptic ulcer.

To extend the description of reflex involuntary reactions, I might point out that the hyperventilating patient, more often than not, is in the unfortunate position of breathing out less air than he inhales. The obvious result of this is a distended lung and thorax into which the patient is frantically attempting to inspire more air. His panicky subjective impression at that moment is one of impending suffocation and asphyxia.

This respiratory distress, however, plus the thoracic pains associated with the pleural and intercostal muscle stretching and the twisting of the highly sensitive costochondral junctions, combine to convince the patient and family of an impend-

ing physical disaster. Actually, of course, the physiological state is quite the opposite in that he is, so to speak, supersaturated with oxygen, and could quite comfortably interrupt respiration for an extended period.

Another example of the reflex effects of voluntary activity is the inhibition of colonic peristalsis by voluntary vigorous contraction of the anus. Normally, this reflex is in the service of the need to choose a suitable time and place for defecation or urination. When such anal contraction becomes habitual and not necessarily related to elimination there results the usual pattern of bowel disturbances comprising the varieties of constipation. This pathophysiological condition is often further compounded by medication, diets, and above all by reinforcing affective reactions to the constipation itself. The treatment of such a complex of pathophysiological, psychophysiological and pharmacological interactions is not easy.

To return to our discussion of the natural history of psychosomatic disturbances, the initiating antecedent events in predisposed individuals are followed by maintenance factors which have to do with habitual emotional reactions and the involuntary reflexes set up by habitual voluntary responses. To the fourth aspect of the natural history of a disease, namely, the promoting factors, I must add not only the intensifying effect of the fixed tissue disease, but also the fact that scientific knowledge about psychosomatic disease and psychophysiology is both slow in development and relatively recent in medicine. As a result, we are inclined to direct our treatment at the particular psychophysiological manifestation which the patient has dramatized, or which seemed important to ourselves. Thus, for organ functions which appear to be increased, we use blocking drugs to decrease the function. Similarly, we use exciting agents to intensify functions which seem decreased. Throughout all this, our tendency also is to use drugs to decrease the patient's awareness of these unpleasant signals from the body, and hopefully, to decrease the patient's display of suffering to us. This not unreasonable approach to the management of these unclassified signs and symptoms does raise, however, a number of curious problems. To begin with, almost all the drugs that we use have side effects which the patient may or may not be happy to exchange for the pathophysiology we wish to treat.

Secondly, these drugs tend to manifest their

effects in two areas; one is in the autonomic nervous system, and the other is in what we might call the patient's consciousness. It is in these areas that another striking property of the emotions and affects can be demonstrated. Because the psychophysiology of affects is manifested mostly through the autonomic nervous system, as well as through the reflex mechanism I have discussed, the effect of drugs can appear to be exaggerated, paradoxical or inadequate, despite physiological doses. Similarly, the effects of our sedatives and tranquilizers bear some relationship to the intensity of the affective state of inhibition or excitement which they are supposed to influence. Here, too, we may get unexpected excessive, insufficient or paradoxical reactions, depending on whether

or not the state of inhibition or excitement tends to fluctuate for reasons outside of the physician's knowledge or control.

In short, the natural history of a psychosomatic disease is also influenced by the state of medical knowledge of the disease and of its treatment. It is perhaps in the sciences of human behavior that current medical education has its major deficiency.

Let me conclude my talk by a simple statement of all that I have said. In our present state of knowledge, the etiology of psychophysiological disturbances is best understood in terms of the pathogenic interactions of our emotions with pathophysiology, the effects of drugs and the state of our ignorance.



# Atypical Epithelial Changes in the Uterine Cervix J. A. Kirkland, J. Clin Path 16:150 (March) 1963

Atypical epithelium, ie, epithelium showing changes just insufficient to warrant a diagnosis of carcinoma in situ, was re-studied in surgical material from 66 patients. Most of these specimens had originally been reported as suspicious or potentially malignant. Of the 66 patients, 62 were alive, and 46 of these were "untreated," having had no treatment to the cervix since the original operation. Thirty-seven of the 66 were examined personally, 28 of these being "untreated"; 19 were found to have gynecological abnormalities. Cytological examination was performed on 36, with only one suspicious smear; none of these patients was found to have invasive carcinoma or carcinoma in situ. Of the remaining 25 patients not seen personally, all were considered by their doctors to be free of any significant cervical lesion. The authors conclude that atypical epithelial changes of the uterine cervix are, over a period of 3 to 12 yr, unlikely to progress either to carcinoma in situ or frank carcinoma. Persistence of inflammation of the genital tract despite previous treatment appears to be common. Sixteen of 37 patients had either chronic cervicitis or vaginitis, and 19 of 37 had some gynecologic abnormality sufficiently severe to warrant further therapy in 14 patients. The high level of persistence, despite previous therapy, must give rise to doubts about the efficacy of cautery (and biopsy) of the cervix as a treatment for chronic cervicitis. More happily, these findings suggest that there is little relationship between chronic inflammation of the cervix with its associated epithelial abnormalities and carcinoma of the cervix. A selected group of 15 cases of probable carcinoma in situ was submitted to 7 histopathologists. Opinions on the same section could vary from benign squamous metaplasia to frank invasive carcinoma. The agreement of situ suggests that a source of reference and arbitration, such as a national panel, is required in order that a clearer understanding be obtained of the diagnostic features of carcinoma in situ.

#### Parathyroid Harmone Hyporesponsiveness in Patients with Basal Cell Nevi and Bone Defects

J. B. Block and W. E. Clendenning, New Eng J Med 268:1162 (May 23) 1963

Two patients with the syndrome of basal cell nevi and bone defects were studied by routine and special tests of parathyroid function, because they exhibited certain clinical similarities to patients with pseudohypoparathyroidism. Both patients were unresponsive to the phosphaturic effect of the parathyroid hormone. Other parameters of parathyroid function were within normal limits. This suggests that patients with this syndrome have a specific metabolic defect in association with their cutaneous and osseous abnormalities, and that they manifest a variant of the syndrome known as pseudohypoparathyroidism.

## HOW STRONG IS A CONVICTION\*

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Henry brosin wrote a most curious sentence in his article on "Psychiatric conditions following head injury" in the American Handbook of Psychiatry edited by Silvano Arieti (Vol. II, 1959). When discussing the less severe concussion cases, Brosin wrote, "As we listen to patients describe their experience during the acute period immediately after an accident (to the head), we learn that the attitudes and words of physicians, nurses, and attendants make a lasting impression on them which takes weeks or more of reassurance to correct if they gained a false impression of their injury." Please note that Brosin stressed that "it takes weeks or more of reassurance" to correct a false impression gained by concussion patients from "the attitudes and words" of professional personnel which were imparted to the patient during a relatively brief, acute period following injury to the head.

Brosin, in his next sentence, points to additional damaging evidence which such patients may obtain from non-professional personnel. He writes, "Relatives and friends can communicate their anxieties and hidden wishes for compensation and thereby needlessly increase the burden on the patient."

These two sentences of Brosin are referred to as being "most curious" only because of the relative ease with which patients with less severe head injuries can reality test the consequences of the injury in comparison with the task facing the mental patient with so-called functional damage. In the reality testing process I would, of course, include the degree of clarity and certainty of evidence which the physician is able to marshall and present when reassuring the patient with a head injury.

Yet Brosin states that it takes weeks or more to reassure such patients. Why should such a relatively simple task consume so much time?

I am sure that you will immediately perceive that there may be several possible answers. One common explanation holds that such patients may have a need or a wish to develop a less serious illness into a more serious illness for reasons of guilt or for secondary gain.

There is at least a second possible answer to the persistence of the false impression. The head, in popular lore, is regarded as a particularly vulnerable part of the body as it contains the brain which is an exceptionally fragile organ. Any damage to the brain is thought to result in serious personality disorder, incapacity, possible insanity, or possible death. A head patient with such a popular conception might well, therefore, be excused by being terrified over the outcome of his injury no matter how frequently the nice doctors tell him that his fears are probably groundless. E. M. Forster in his 1910 novel, Howards End, (Forster, 1921) wrote, "Actual life is full of false clues and sign-posts that lead nowhere. With infinite effort we nerve ourselves for a crisis that never comes." The quotation seems to be particularly applicable to the quandary in which mental patients find themselves. How much of their behavior is determined by the inaccurate knowledge they have of themselves?

In the remainder of this paper, I shall be dealing primarily with the second possible explanation—the significance of convictions about the self where mental illness is concerned. The first explanation based upon symptom as conflict resolution or need fulfillment is only too well dealt with by others. Karen Stephen's recent book, The wish to fall ill (1961) deals fully with the first explanation. I see no particular reason why the two explanations might not eventually be amalgamated; but as this paper is primarily a report on the thinking behind a long-term research investigation, I am concerned only at this time with the exploration of the significance in behavior of a conviction that one has something wrong with his mind.

Our studies are purposely limited at this time to explorations of mental patients' conscious or preconscious concerns about their mental health in *their* terms and as *they* see the problem. Some years ago, my collaborator, Dr. Fred Herring, Chief Psychologist in the PN & P Service of the

<sup>\*</sup>Paper read at the 15th Annual Institute in Psychiatry and Neurology at the Veterans Administration Hospital, North Little Rock, Arkansas, March 1, 1963. The research referred to was supported partially in some aspects by grants from the Council on Research and Creative Work of the University of Colorado. 1 am grateful to George Katz, M.D., for his critical reading of an early draft.

Denver VA Hospital, referred to this topic as "mental hypochondria." For the person who has a conviction that there is something wrong with his mind, we have more recently coined the term, "phrenophobia." I am sorry that "phobia" appears in this compound word, as phrenophobia is now intended to mean a conviction rather than a fear, although convictions of mental sickness can certainly be manifested most vividly in fear or dread.

Our investigations lead us to suspect that phrenophobia in some form occurs in many if not most mental patients, and that this conviction may perhaps intensify their problems and prevent rehabilitation. The basic question is, of course, the significance of phrenophobia in mental pathology. I wish that we could present a packet of quantified data on slides in a darkened auditorium. Such a procedure provides much greater freedom for all concerned. Unfortunately, we are only now developing instruments for more objective research, so the content of this paper is based largely upon treatment-oriented interviews which have been tape-recorded.

May I return to the conviction of many mental patients that they have something wrong with their minds. This picture which I am about to paint of the evidence which they collect to support this conviction may be blacker than it should be in many instances, but in far more instances it may not be black enough. May I say we are not trying to blame anyone for the conditions which almost automatically surround the person who suspects or is suspected of being a candidate for psychiatric attention. I should also add that I am referring primarily to hospitalized mental patients, although many others, including some college students with whom I have worked in a counseling or psychotherapy situation, who do not get near a hospital, may well get the full treatment unwittingly forced upon them.

If we start with the patient's own symptoms, we frequently find a period of feelings of discomfort manifested by anxiety, insomnia, restlessness, irritability, digestive disturbances—I won't go on as you are probably more familiar with symptoms than am I. As the discomfort mounts and the symptoms increase in number, the patient usually visits a physician who, if medical problems are not found, may refer him to a psychiatrist. If the patient has not, by this time, guessed that maybe he has a mental condition, the referral to the psychiatrist will certainly give him new ideas.

Referral to a psychiatrist usually mobilizes so much anxiety added to that which the patient is already experiencing that often the actual trip to the psychiatrist is postponed in the hope that something else will turn up. And sometimes, of course, it does.

Let us suppose, however, that the patient actually gets to the psychiatrist either under his own steam or with the help of relatives or friends. Let us suppose, also that the psychiatrist exercises the most admirable tact and the highest degree of diagnostic skill. How often can he give the patient convincing evidence that his mental condition will not become worse, that he will not, eventually, suffer a mental breakdown, a mental crackup, or perhaps require hospitalization? Here, of course, we are dealing with the problem of prognosis in mental disturbance, and while I am not referring only to incipient psychotics, I am eliminating those clear-cut and temporary situational disturbances in persons with histories of quite effective adjustment in which the prognostic problem is risky, to be sure, but in which the chances are strongly against the development of a serious neurotic or psychotic break.

The problem of convincing the patient that nothing serious is going to happen to him is complicated, therefore, by the professional problem of being able to predict in advance, even with the help of psychological tests, those persons who will most probably recover with treatment or perhaps without treatment, and those who with or without treatment are likely to become worse and perhaps will qualify as mental patients in the more formal meaning of the term.

Today, of course, the physician is probably helped considerably in his task of convincing the patient by employment of tranquilizers and other drugs which may provide the patient with almost immediate proof that many of his symptoms can be alleviated, at least temporarily. The drugs may also, of course, occasionally create additional symptoms and provide the patient with additional fear that there is something wrong with his mind.

Let us suppose that we follow the patient beyond the psychiatrist's office and past the point where the drugs have failed to keep him from being hospitalized. He is now entering either a mental hospital or a psychiatric ward. He may or may not have been committed by a court, but he is about to spend at least several weeks if not months in what patients, themselves, delicately refer to as the "looney bin" or any of the other

terms which most patients find too esoteric to be used openly in front of the professional staff.

I doubt that many of us really believe our own propaganda which currently holds that mental illness is just like any other; and that modern methods of treatment now enable us to return the mental patient to the community just as good as he was before he entered the club house for a few weeks rest. Maybe we are getting much closer to making those statements come true, but from having discussed just these problems with a fairly large number of hospitalized patients and some recovered or remitted patients, I am quite convinced that patients themselves rarely accept these propositions even after several months in a good VA GM&S Hospital such as the one in Denver.

For example, one 42-year-old ex-fighter pilot, who had been hospitalized by his family physician for high blood pressure suspected of being psychosomatic, told me during the first three months that he had never been concerned about the functioning of his mind. Suddenly, he said that walking up the steps into the hospital lobby on the day of his admission was the hardest thing he had ever done. He had feared a mental breakdown for several months because his physician had prescribed tofranil and had shown the patient the drug company's brochure which included a statement that the drug was used for serious mental disorder. That, at least, was the patient's recollection. His wife, he said, had wittily kidded him about the possible need to commit him to the state hospital. Upon second recall of that amusing conversation he omitted the reference to his wife's wit.

As another example of an ex-patient's failure to believe what we want him to believe about mental illness, a renowned psychologist who had once been hospitalized for a psychotic break, told me, with the help of a common liquid tranquilizer, "No one who has ever been psychotic entirely trusts his own thinking afterwards."

To return to the patient who has now been hospitalized, I don't believe I need to describe in detail the kinds of evidence which patients collect to support their concern about mental illness even in a good modern hospital. I believe that, in addition, we can assume that there is always an initial fear of loss of identity as well as a concomitant and probably interrelated fear that the hospital doors will not open for him again.

John and Elaine Cumming, in their book,

Closed ranks (1957), have amply illustrated such fears as these in their surpassingly honest examination of the failure of their mental health education program in a Canadian community. Although they did not obtain data from mental patients themselves, they did something even more significant—they found out that even among reasonably well-educated members of the Canadian community, there was a general conception that mental patients were sentenced to a form of living death with physical as well as emotional divorce from the family and the community. I see no reason to believe, if the normal members of a community have such a conception of mental illness and hospitalization, that the hospitalized members of the community would have any different conception—except worse, of course.

The Swedish playwright, Strindberg, who was himself psychotic on several occasions, coined a catchy little aphorism for this popular conception of mental illness. He wrote, "Better the grave than the asylum."

To go back to rather ancient history, we also have the testimony of the prophet, Job, who wrote,

When I say my bed shall comfort me, my conch shall ease my complaint,

Then thou scarest me with dreams, and terrifiest me through visions;

So that my soul chooseth strangling, and death rather than my life.

I loathe it; I would not live always: let me alone; for my days are vanity.

So far, I have, of course, simply been tracing some of the experiences which are common events in the lives of mental patients. But what is the psychological significance for the patient of the knowledge that he has something wrong with his mind? If this supposed knowledge is a constant factor in the patient's conception of himself, what are its consequences in his behavior? What effect does this belief have upon his participation in living? What role does it play in his anxiety? What effect does it have upon his anticipations of his future? In other words, how strong is a conviction?

A little over a year ago when I first had to organize some of these thoughts on paper, I was forced, I felt, to recognize that the patient's phrenophobia might be only simple, factual insight into his illness. There is no reason to suppose that patients, even most functional psychotics, are unaware of the fact that they have mental symptoms. Why then, is it necessary to

suppose that this concern over one's mental integrity is more than such a factual recognition?

Over the past year, one facet of this problem has struck me as significant; so that now I am quite willing to go beyond the statement of the problem as being a dilemma. It seems to me that, regardless of the ultimate consequences of a man's convictions about himself, they do make a difference. If a belief about the self or the world is held with any degree of conviction, then people, even mental patients, will take such a belief into consideration when they are making choices, when they are participating in social activities, when they are working out vocational plans or projecting their futures. More specifically, if a man has a conviction that he is sick, regardless of his particular conception of what is meant by sick, this conviction will make a difference in his living and in his experiencing. He may think only that his nerves are weak, or that his brain has a few loose connections, or that his fragile organ, the mind, is in imminent danger of shattering; nonetheless, a person with such fears, well-concealed as they may be by defensive structures, is bound to modify his behavior, his thinking, his planning, and his risk-taking. The problem for Dr. Herring and myself, of course, is to find out how much of a difference such a conviction makes in mental patients, and what are the individual differences which one may expect to find.

There is still another way of phrasing the problem. Dr. David Starrett, Associate Chief of Staff for Psychiatry at the Denver Hospital, a psychoanalyst not particularly inclined to sympathize with non-Freudian interpretations, has helped considerably recently by suggesting that we are technically interested in exploring the symptoms which may be produced by the symptom which I have been discussing as a conviction that there is something wrong with the mindphrenophobia. I see no reason to disagree with the notion that this conviction is a symptom. In the realm of psychopathology, there is, of course, considerable debate over not only the line of demarcation between symptoms and underlying causes, but also over the relative efficacy of symptomatic treatment versus treatment of more fundamental causes.

#### The Incidence of Phrenophobia

In turning to the problem of the incidence of phrenophobia, I should like to emphasize the common observation that most patients find it very difficult to provide systematic descriptions of their symptoms and their concerns about themselves. They certainly lack the felicity of phrasing which would make simpler the research task of assessing its incidence. We have learned that choice of terms used in interviews is frequently crucial for what is revealed by a patient. Few of them have stomach for the word "crazy," although hospitalized orientals in the Hawaii State Hospital do not seem to object particularly to "pupuli" which is the Hawaiian equivalent of "crazy." I have found that "crack-up" is ambiguous enough to possess little threat, but it is also ambiguous in interpretation.

The semantic problem is also complicated by what appears to be a frequent tendency toward denial of concern about one's mind. A patient who was a college graduate persistently denied to me any concern about his mind, but when about to be discharged after recovery from a depression he said, "I have never been concerned about losing my mind. I just think that I have an emotional instability which may crack me up permanently."

Another problem in trying to study the incidence of phrenophobia is encountered in the aversion to discussing it which is probably part of the denial reaction. One patient who freely admitted his anguished conviction that additional stress and rejection would lead to psychosis, told me thoughtfully one day that he really never thought about his fear of insanity. When I looked surprised, he added helpfully that he never thought about it because, "it is always there."

In view of the difficulties involved in assessing the incidence of phrenophobia, we have not made very consistent attempts to conduct such surveys. One minor study of a small group of randomly selected mental patients in the Denver VA Hospital, performed by a psychology trainee, Marshall Rosenshine, showed that on a simple questionnaire 70% of the patients indicated considerable concern about the possibility of cracking up mentally, and the same patients also tended to have very high anxiety reactions. Dr. Frederick C. Thorne, who is in private practice at Brandon, Vermont and also teaches at the medical school of the University of Vermont, reports in a recent book (Thorne, 1961) that 78% of his office patients have "fears of imminent mental breakdown," while 22% have "Feelings of actual disintegration occurring."

For myself, I feel fairly certain that phrenophobia in some form is present in the self concepts of almost all hospitalized mental patients, but we have not yet had opportunity to work with many chronic patients because of the typical population of a GM & S hospital. In addition, my friends are quite sure that I detect phrenophobia at the bottom of each cup of coffee; so I don't trust my own impressions any more than they. There is comfort to be found, however, in the statement of a psychoanalyst friend that he finds it in every patient he sees, and in a similar statement from a fellow psychologist working in the Mental Hygiene Unit of the VA Hospital. Dr. George Katz, a psychiatrist at the Denver Hospital, who worked with the Jules Masserman, tells me that Masserman once taught that man's three basic fears are fear of death, fear of invalidism, and fear of insanity. I have been unable to find this in any of Masserman's books, of which there are many; so I cannot be sure that he is still of the same opinion.

#### The Autonomy of Phrenophobia

Despite what we believe to be the widespread incidence of phrenophobia among mental patients, we are not as yet able to do much in the way of classifying its manifestations, or in gauging its strength and significance as far as individual patients are concerned.

Recently, we have become interested in the possibility that phrenophobia may, in some patients, become at least relatively autonomous, and to a large extent may dominate the behavior of the patient for longer or shorter periods of time. As far as the shorter periods of time are concerned, I would have no question concerning either the autonomy or the domination of such a conviction. There is every reason to believe that imminent disaster of any kind, such as immediately impending loss of love, loss of one's personal fortune, the possibility of death from, say, cancer, as well as the beginning stages of an acute psychotic break, all can certainly preoccupy one's thoughts and one's dreams as well as dominate one's behavior quite apart from the genetic reasons behind the need for love, money, physical health, and mental integrity.

Where longer periods of disablement are concerned, we have even less reason to believe that phrenophobia has become autonomous, although if convictions about the self are as persistent and influential as convictions about the external world, there is at least plausibility in the notion that such a conviction might have major consequences over long periods of time.

If there is a possibility that phrenophobia might become autonomous, this implies, of course, that the conviction has roots and undergoes development. What are its possible sources? As mentioned earlier, we have no intention of ignoring the possibility that the conviction of impending mental breakdown may have its roots in defensive operations, and may be only a symptom of deeper conflict. On the other hand, we are impressed with the fact that mental patients during the course of their disorders, whether they are neurotic or psychotic, build up an increasingly greater burden of conviction that there really is something wrong with their minds.

Patients who have experienced anxiety symptoms are, in my opinion, very likely to interpret these *not* as the reactions to stress, which they are, but rather an indication of a possibly irreversible breaking down of their mental processes. How much worse, however, must be the infinite effort of the patient who has already experienced an acute anxiety panic or an acute psychotic break.

In a somewhat different context, Federn wrote, (1952) "Metapsychologically, the primary schizophrenic process appears to be a functional deficiency, or even exhaustion, of ego-cathexis; secondarily, it is used as a defense mechanism." Could such a functional deficiency of ego-cathexis be, in reality, a hardened, autonomous conviction of a shattered psyche which produces a posture in the patient of utter helplessness? Could this conviction, reinforced endlessly, create the chains which bind the mental patient?

#### Phrenophobia and Hospital Procedures

As in all other sections of this paper, this last section on phrenophobia and hospital procedures consists primarily of questions rather than answers.

Some time ago, I copied from a magazine, which was probably the *Reporter*, a quotation from a patient who was describing her convalescence from mental illness, and subsequent discharge from a hospital. She wrote,

Now I'm not afraid anymore—that's the real reward of success—you're not afraid to expose yourself.

On my note I included the author's name as Ketti Frings, but I have not the slightest idea who Ketti Frings may be. The quotation, however, makes me wonder whether it might not contain the germ of a significant link between the fear and apprehension, so characteristic of patients,

and the effects, of modern hospital activity programs. Ketti Frings wrote, if you will remember, that the real reward of success is the elimination of fear, so that she was no longer afraid to expose herself; which I take to mean that she was no longer unwilling to engage in pursuits which made up her normal life. Please note that she states that it is success which eliminates the fear.

Although I may certainly be reading between the lines of this very brief quotation, it strikes me that perhaps a major task of the mental hospital is to convince the patient that he is not as sick as he thinks he is. If the hospital can counter the patient's conviction that he is a very sick person who is likely, under the slightest personal stress, to suffer a psychotic break or to reexperience the horror of losing control of his mind, will such a disruption of the conviction improve the patient's condition? If the disruption is likely to improve the patient's condition, what are the procedures which might be helpful in convincing the patient that he is not as sick as he thinks he is? That the links of the chains that bind him are not chemical, neural or mental but rather are wrong conceptions of himself which can be modified?

I have no intention, as yet, of ascribing the patient's growing conviction of being "mentally sick" as a primary etiological factor in the development of a major mental disturbance. Nor am I proposing that the only purpose of hospitalization is to convince the patient he is not as sick as he thinks he is. Nonetheless, there seems to be widespread acceptance at the present time of the need to keep patients occupied whenever possible in order to fend off the debilitating effects of inactivity. I would add to reasons behind activity programs, the need to interfere with the sick person's very strong desire to brood about his condition, to spend hours worrying about his problems, and to spend other hours engaged in symptom-hunting. These pursuits of the patient may well increase his phrenophobia.

Another reason for activity programs, and one with which I am less familiar because only recently have I recognized it is a fairly frequent pattern in patients, is the self-imposed injunction to "keep fighting it!"

When asked to describe, "fighting it," a frequent answer goes like this. "When I feel something coming on, I sit there and decide that I am damn well not going to let it get me down this time." Further questioning usually reveals

that the patient is literally interpreting the word "fight" in the injunction. He tenses his muscles, concentrates on fending off his mounting anxiety, and thereby creates what a fertile condition for increasing the intensity of the anxiety reaction. As patients do not know what they are fighting, the tense self-examination which accompanies the tense concentration may well serve to intensify, if it does not create, the confusion and other symptoms which come about when any normal function is examined too closely, particularly if one is engaged in symptom hunting. Further questioning of these patients reveals that some of them will literally spend the major portion of the day dutifully absorbed in "fighting it" rather than resorting to normal distractions, which to them seem to be shameful evasions which are likely to make them worse.

There is no need to present in detail the many deleterious effects of non-activity not only upon mental patients but also upon the technologically unemployed as well as upon other mortals like you and me. The great surge of interest in hospital activity programs in the last few years has led to the frequently heard statement that chronicity in mental patients is a product of the inactivity found in the old custodial hospitals. I realize that verification of such a statement is confounded by the introduction of tranquilizers and other medications, but I wonder whether the activity programs do not represent in some fashion the practice of early ambulation following surgery. Could it be that in some cases, at least, the plunging of patients into activity programs soon after the cessation of an acute psychosis might lead to more rapid restoration of mental functions, thus avoiding the reinforcement of the patient's conviction that he is a sick man with a tenuous hold on reality? The recent book by John and Elaine Cumming, Ego and milien (Cumming, 1962), outlines such a conception in some detail, and also contains a thought-provoking rationale for such procedures.

Although we hestitate to put all of our eggs in one basket, our own thinking makes it possible to conceptualize not only the effects of inactivity upon the mental patient but also to point in general to the effects of certain kinds of activity upon convalescence from a mental disturbance. If phrenophobia constitutes a major conviction for the patient which guides the kinds of risks he will take and kinds of normal experiences which he will avoid, then activities which

provide him with counter evidence may disrupt the conviction and permit him to return more rapidly to normal living.

You may wonder how such a conception may accord or conflict with the two goals-stimulation and resocialization—ordinarily sought in activity programs including group therapy. In our thinking, both stimulation and resocialization can neatly be subsumed under the notion that stimulation is needed to motivate the patient to act, so he can discover that he is still capable of performing many normal activities. In addition, most of our normal activities are socially imbedded and ordinarily provide the major stresses for man in our culture. The patient's social successes and failures, even those, to us, tiny ones encountered in routine ward living, become guideposts or markers for deciding whether he can perform those activities which make life meaningful to him without running the risk of being catapulted into a depression, an anxiety attack, or an acute psychosis. Undoubtedly you can hear in these paragraphs reverberations of Ketti Frings' single sentence,

Now I'm not afraid anymore—that's the real reward of success-you're not afraid to expose

Other reverberations may also have been detected throughout this paper. In our conjectures about the strength of a conviction-phrenophobia-we like to think that we gain support from the more general, and certainly at this point, more systematic theorizing of such writers as the psychologist George Kelly (The psychology of personal constructs. Vols. I & II) (1955); the psychiatrist-psychologist Jerome Frank (Persuasion and healing.) (1961); and the psychiatrist-sociologist team of John and Elaine Cumming (1957; 1962). Please, however, don't hold them responsible for the word, phrenophobia, as that sin we committed in private and by ourselves.

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#### **Unsuspected Pulmonary Foreign Body** Report of a Case

D. S Nightingale and J C Thompson, New Eng J Med 268:1291 (June 6) 1963

A 62-year-old man was admitted with a 12month history of cough, intermittent hemoptysis, and 18 kg weight loss. Physical examination revealed an area of increased dullness over the 2nd and 3rd right anterior intercostal spaces. Chest x-ray showed an oblique linear density in the right upper lobe associated with a large infiltrative process. This was thought to be a pneumonitis, probably associated with carcinoma or tuberculosis. Thoracotomy revealed a large inflammatory mass surrounding a  $6 \times 6 \times 0.3$  cm fragment of heavy glass. A right upper and middle lobectomy was performed. Later the patient remembered a misunderstanding which occurred 8 years before hospitalization in the course of which he had been stabbed in the back with a bottle. He said he had

overlooked this point in the history as it seemed insignificant. The patient's postoperative course was entirely benign.

#### Hydrolysis of Norethindrone Acetate by Fetal and Placental Tissue

G. Betz and J. C. Warren, New Eng J Med 268:1171 (May 23) 1963

Norethindrone acetate was incubated with whole homogenates of fetal liver and lung as well as placenta in phosphate buffer for 1 hour at a temperature of 37 C. The tissues were obtained from pregnancies of 8, 14, 16, 24 and 40 weeks duration. Significant yields of free norethindrone were present after incubation. Norethindrone itself has been associated with masculinization of the female fetus when given during pregnancy. These observations render norethindrone acetate suspect as a cause of possible future masculinization.



# WHAT'S NEW IN OTOLOGY SURGERY OF OTOSCLEROSIS

A. J. Brizzolara, M.D.\*

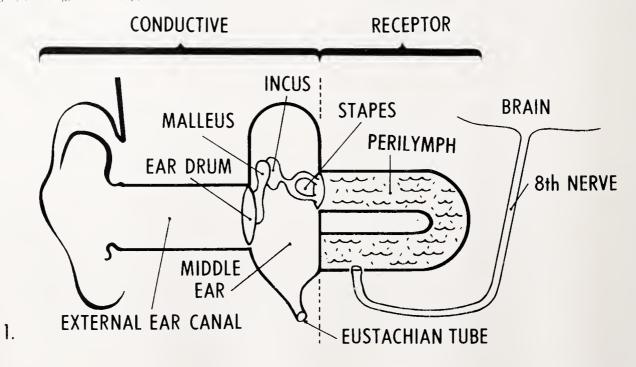
Since the advent of modern temporal bone surgery, brought about by better understanding of the physiology of hearing, the discovery of chemotherapeutic and antibiotic agents and the development and utilization of the operating microscope in the 1930's and 1940's, the surgical correction of conductive hearing depression has advanced rapidly to the point where one may now offer to patients with this type of hearing loss produced by otosclerosis a 90 to 95% chance of obtaining hearing improvement by surgery.

Preceding the dawn of this era, attempts at correcting this type of hearing depression had been made but, because of incomplete understanding

of the physiology of hearing, infections in the operative site and inadequate illumination and magnification, these efforts ended in failure. With the surmounting of these obstacles through better understanding of the physiology of this sense, elimination of the problem of infection with present day antibacterial therapy and the development of the operating microscope, it is now possible to really offer help to these patients.

Before proceeding, let us look at the ear from a functional standpoint. Functionally, the ear is divided into two portions. The anatomical outer and middle ear are combined to make up the conductive portion and the inner ear comprises

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the receptor (See figure 1). The conductive apparatus through the lever-like action of its ossicular chain and the impedence matching ability of the relative large drum surface acting on the small stapes footplate brings sound energy from the surrounding environment to the organ of corti. The delicate hair cells of this organ, surrounded by fluid and enclosed in the bony cochlea, is the second part of the hearing organ. Through it and the cochlear division of the eighth nerve, nerve impulses are created and transmitted to the brain. This second part is the real organ of hearing and it must be intact and functioning for a person to hear. Fortunately, otosclerosis does not, as a rule, primarily attack the organ of corti, so it is usually intact and functioning normally. Pathology of either the conductive or receptor apparatus will, of course, produce depression of hearing. This fact leads us to the problem of correctly diagnosing the pathology for, at the present time, there is no definitive medical or surgical treatment for pathology of the organ of corti.

Otosclerosis, which is probably the commonest cause of hearing depression in young adults, is a disease of unknown etiology which fixes the stapedial footplate in the oval window with bone, preventing the transmission of sound energy to the organ of corti in the inner ear, thus producing decreased hearing acuity.

The pathology of otosclerosis is essentially a roadblock at the stapedial footplate to the transmission of sound energy beyond this point (See figure 2). The etiology is undetermined but the proliferation of bone which takes place in the

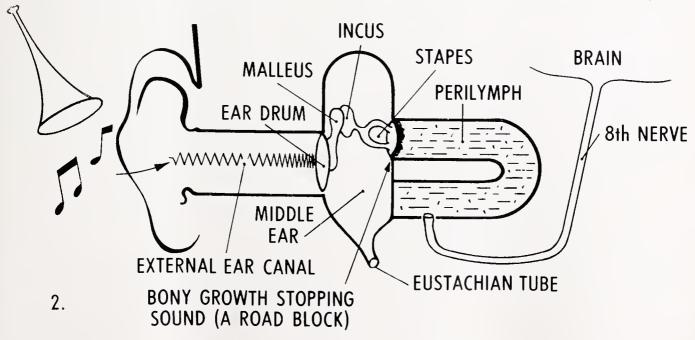
vicinity of the oval window effectively fixes the stapes preventing its moving and this obviates stimulation of the hair cells in the organ of corti.

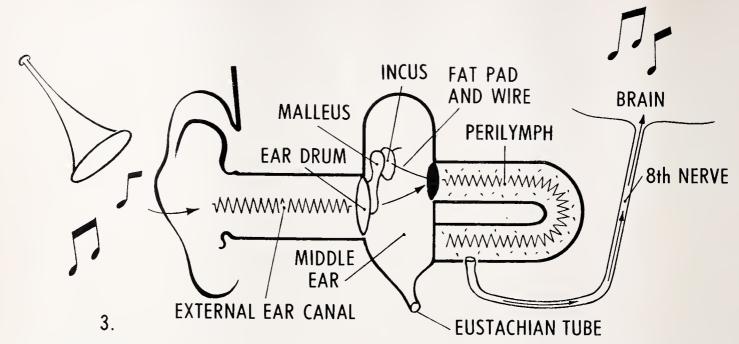
Patients with this condition usually complain of gradual onset of depressed hearing which may be unilateral but is usually bilateral and there is no history indicating chronic otitis media. They are able to wear an aid effectively. Patients may volunteer the information that they hear better when using the phone or when in noisy surroundings. This latter history is known as "paracusis willisi" and is caused by the fact that people with normal hearing unconsciously raise their voices in noise; individuals with otosclerosis, a conductive loss, do not appreciate the extraneous noise level and, consequently, hear better when others speak louder. Patients may also complain of tinnitus although this is not a consistent finding.

In contradistinction, patients with pathology in the inner ear will usually, upon questioning, state that they hear better in quiet surroundings and better when facing the speaker. They are likely to say that they hear but do not understand and they do not tend to hear better when using the phone. Several people talking simultaneously confuses them in that they hear the voices but cannot distinguish the words.

Physical examination of patients with otosclerosis usually reveals normal tympanic membranes with no evidence of pathology.

The definitive diagnosis of this condition is established by audiometry. The fact that patients with conductive hearing depression appreciate sound better by bone conduction than by air conduction, a negative Rinne's test—that is, just the

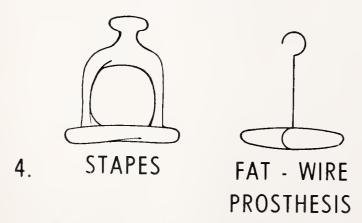




reverse of normal—is utilized through the audiometer in conjunction with discrimination tests using monitered speech to make the diagnosis.

Having confirmed the diagnosis, treatment consists of again making possible the entrance of sound energy into the conchlea by removing the roadblock at the oval window; then, reestablishing continuity of the conductive mechanism with the inner ear.

This is accomplished by removing the stapes and the otosclerotic focus from the oval window and then recoupling the ossicular chain to the inner ear with a prosthesis (See figure 3). There are several procedures utilized for this purpose; however, after using a number of different methods, I have settled upon the steel wire, fibro-fat tissue prosthesis (See figure 4) as being most satisfactory for the following reasons.

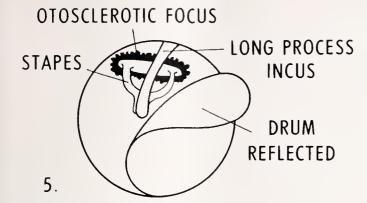


1. When the oval window is deep and narrow, as it often is, it is not necessary to convert it to a wide shallow saucer by drilling away bone as is necessary to prepare the area for placement of a large, polyethylene strut and relatively thick

vein graft. This eliminates the added trauma and osteoblastic stimulation produced by drilling.

- 2. The fibro-fat graft more effectively fills the oval window, actually fitting into the oval window rather than simply bridging over the opening, thus tending to more nearly resemble the stapedial footplate in action than does a sheet of tissue stretched over the oval window.
- 3. There is immediate permanent attachment of the stainless steel wire to the incus. This raises the point of advisability of implantation of foreign material in the body. Polyethylene plastic has been used a relatively short time and there has been a report of a sarcomatous-like lesion produced in experimental animals by its use; whereas, stainless steel wire has been implanted in body tissues over a period of many, many years with no deleterious effects. In other words, we know what stainless steel will do; whereas, more time must pass before the same can be said of polyethylene plastic.
- 4. The wire tissue graft can be adapted to any anatomy rather than having to adapt the anatomy of the ear to the implant as is necessary in the plastic tubing vein graft technique. In my opinion, any procedure which requires less surgical manipulation with correspondingly good results and does not institute reservation as to how tissue will react to the prosthesis, is the procedure of choice.

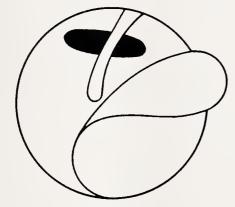
The technique consists of exposure of the middle ear by reflecting the posterior half of the drum forward (See figure 5). The incudostapedial joint is interrupted, the stapedial crura are



fractured at their insertion into the footplate and the tendon of the stapedius muscle is severed. This makes possible the removal of the head, neck and crura—the stapedial superstructure—from the middle ear.

Mucosa is then removed from the lateral surface of the footplate, thoroughly exposing the pathology. The footplate is fractured with a small pick following which it is removed from the oval window in two or more segments exposing the perilymph in the vestibule of the inner ear (See figure 6).

# STAPES REMOVED EXPOSING VESTIBULE



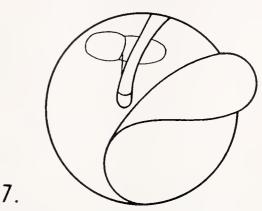
A small piece of fat is removed from the lobe of the operated ear, thus making it unnecessary to move to another operative site as is required in the vein graft technique.

6.

The dimensions of the oval window having been previously determined, the fibro-fat is shaped correspondingly and then firmly tied to the stainless steel wire. This prosthesis is then measured to the proper length on a special die and a shepard's hook created at the end opposite to the attached piece of fibro-fat. The fibro-fat is now placed in the oval window and the shep-

ard's hook locked over the long process of the incus, effectively and permanently anchoring it in place (See figure 7).

### PROSTHESIS IN PLACE



The drum is now returned to its anatomic position, the roadblock having been removed and continuity of the sound conduction mechanism reestablished.

The patient is confined to bed with the operated ear uppermost for 24 hours. Bathroom privileges are allowed the following day with full ambulation beginning within the succeeding 24 hours.

Most patients are discharged from the hospital in 72-96 hours following surgery. Most patients experience mild vertigo upon head motion for 24-48 hours while an occasional patient will experience unsteadiness on motion for a longer period of time. The average patient is ready to resume full activity in 10-14 days.

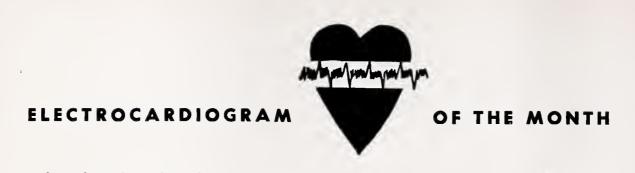
#### Summary

The anatomy and physiology of the peripheral hearing organ is outlined.

The diagnosis of conductive hearing depression is briefly set forth and a method of removing the pathology and improving hearing, which has proven to be affective in 90% to 95% of otosclerotic deafened patient's, is presented.

#### Conclusion

Otosclerotic produced conductive hearing depression is probably the commonest cause of deafness in young adults. Stapedectomy with fibro-fat stainless steel wire stapes prosthesis, in my opinion, is—because of ease of adaptability to the anatomy with minimal trauma, proven host toleration to the prosthesis and minimal recovery period—the treatment of choice.

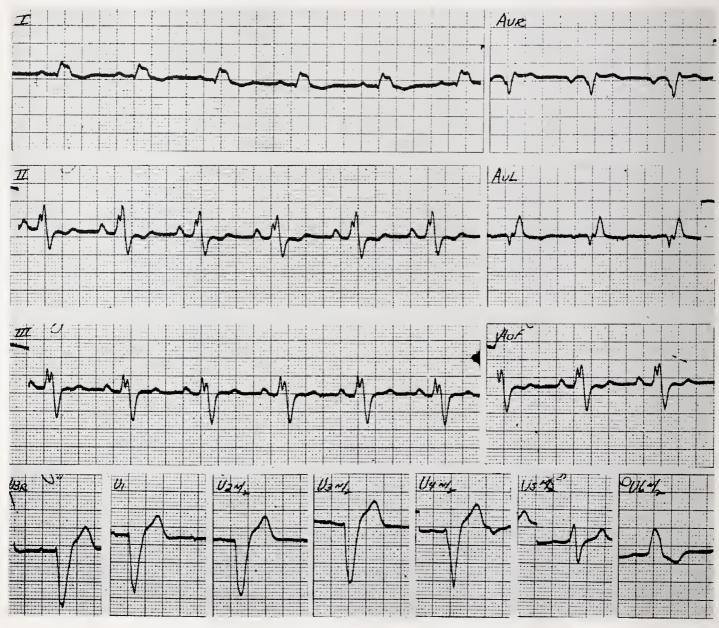


#### WHAT IS YOUR INTERPRETATION?

AGE: 48 SEX: M BUILD: MEDIUM BLOOD PRESSURE: 140/90 MEDICATION—Digitalis, amount not known.

HISTORY—History of some precordial discomfort and dyspnea

#### Answer on page 199



The Department of Medicine, University of Arkansas Medical Center
\*James S. Taylor, M.D., Professor of Medicine

## WHAT IS YOUR DIAGNOSIS?

Prepared by the
Department of Radiology, University of Arkansas
School of Medicine, Little Rock

Answer on page 199





CASE NO. 7

No. A07-04-86

70 year old colored female

History:

The patient had vague complications of "nervous spells." The film of the pelvis was made during a routine bone survey.



#### PUBLIC HEALTH AT A GLANCE

# A REPORT ON HOME NURSING CARE SERVICES IN ARKANSAS

Bryant S. Swindoll, M.D.

Division of Chronic Diseose Control State Heolth Deportment

During the Year 1961, the president of the United States recommended to the Congress that it pass a Community Health Services and Facilities Act. This act was sponsored in the House of Representatives by Representative Oren Harris of Arkansas and in the Senate by Senator Lister Hill of Alabama.

The Act has three major objectives: 1) increased availability, scope, and quality of community out-of-hospital health services and facilities which will assist in meeting the health needs of the chronically ill and the aged; 2) increased and expanded health facility research, demonstrations and experimentation; and 3) increased construction of health research facilities.

The Congress provided matching-grants, called "CI" funds, to States (through the next five years) to stimulate communities to meet these basic and increasing health needs. They also provided for project-grants (for five years) for studies, experiments, and demonstrations directed toward the development of new or improved methods of providing health services outside-the-hospital, with particular emphasis on the needs of chronically ill and aged persons.

It was this project-grant fund that gave the Arkansas State Health Department an opportunity to test the feasibility of a Home Nursing Care Program in Ouachita County. Approval of The Council of The Arkansas State Medical Society and of the Ouachita County Medical Society was first obtained and then a survey of the health needs of the chronically ill and aged was made. Then the program was initiated September 1, 1961 using public health nurses to give home nursing care to selected patients on referral from private physicians in the county.

The program has been successful beyond our fondest hopes due to strenuous and diligent work on the part of members of the Ouachita County Health Department and to excellent cooperation of the members of the Ouachita County Medical Society.

Due, in part at least, to the success of the program in Ouachita County, a Division of Chronic Disease Control was formalized and initiated by the Arkansas State Health Department on January 1, 1962. Since then, eighteen additional counties have started the program and five others are now in the process of training additional personnel so that it can be initiated in their areas (see attached key map). Also, an effort is being made to recruit personnel for several other counties from which requests have been received from the medical profession to start the program. We feel that this service will not only be of great benefit to the chronically ill and aged who are referred by their physicians but will be instrumental also in getting medical care to those people who cannot, or will not, get in to see their physicians as often as they should. We also believe that the service will help to keep the doctors in closer contact with these patients by acting as a case-holding technique which will be of benefit to the medical profession and will assure the chronically ill and aged of getting medical care more often than would otherwise be possible.

If a program of this kind is to succeed, it must be medically oriented. By this we mean that it must be under direct supervision of local private physicians who assume responsibility for the patient's treatment. The physicians write treatment orders and give them to Public Health Nurses who in turn visit the patient concerned and carry out the designated orders. No patient is admitted to the service without being referred by his, or her, private physician. This keeps the program in its proper perspective; that is, it is always under the doctors' control where it should be at all times.

The nurses act in close liaison between the patient and the doctor. They not only carry out the doctors' orders but also keep records of these treatment procedures, keep the doctor informed as to the condition of his patient at periodic intervals, check with him on any therapeutic changes that may be indicated or that he orders, make arrangements for the patient to see the doctor if they think it necessary, and keep the doctor posted on anything in the patient's environment that may be harmful to his physical or mental well being.

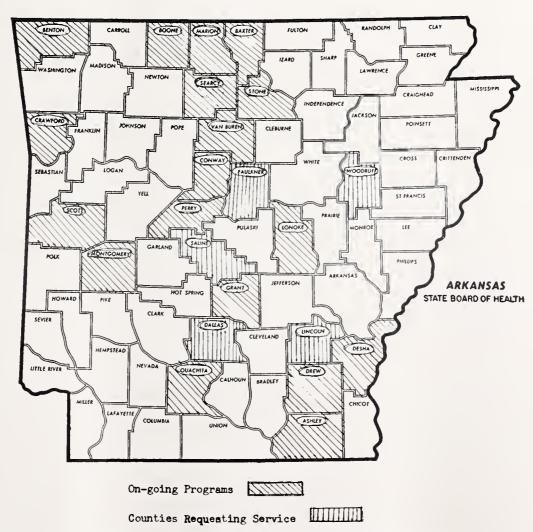
In counties where additional nursing personnel is needed, clinic aides are employed to assist the nurses in the care of their equipment. When she is not busy with these duties, the clinic aide helps the clerk in various ways in taking care of the added clerical duties brought about by initiation of the program.

In an effort to get the very best possible home nursing care to patients with chronic illnesses, we cooperate closely with any or all of the bureaus and divisions of the State Health Department as well as various other official and non-official agencies throughout the state.

Even though this division is relatively new as compared to most others in the State Health Department, we feel that it is "well off the ground" and that it is lending a needy and useful service to the people of Arkansas. We think that as the program expands and people become more aware of its services to the chronically ill and aged, we will have less difficulty recruiting personnel and obtaining much needed supplementary financial support from our legislators.

# HOME NURSING CARE SERVICES IN ARKANSAS DIVISION OF CHRONIC DISEASE CONTROL

July --- 1963



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# CLINICAL RESEARCH UNIT OF ARKANSAS MEDICAL CENTER

John A. Pierce, M.D.

Associate Professor of Medicine
University of Arkansas Medical Center

The clinical research facility which opened at the University Medical Center carries several implications of great significance to our medical society and to the citizens of the state. More than two dozen medical schools sought such an award. Arkansas was ranked among the top ten facilities in the nation for favorable consideration. This selection was not made lightly or simply on the basis of written applications. A team of experts visited the Center and interviewed faculty members concerned with the program. They inspected the physical facilities and scrutinized the caliber of the proposed investigations. The application could be approved only if it had favorable comment from the reviewers. Activation of the new unit offers a tangible expression of confidence by the national group in the standards of excellence at the Center. It also confirms the opinions of other committees which have approved the allocation of additional funds to the clinical departments of the Center in recent years for a greatly expanded program in research. There can be no question that the magnificent buildings at the Center had an effect on the award. This factor should not be overestimated, however, as the people on the project site visit were not the type to be easily impressed by bricks, no matter how elaborately arranged. It may be concluded that our Center has received a national approval which is not easily achieved and which is a distinct honor to its faculty, its students, its immediate medical associates and its constituents; the citizens of Arkansas. We have every right to be proud.

There is another significance to the unit which

might not be apparent to the casual observer. The University of Arkansas has never had even a single hospital bed devoted purely to the study of disease. It never had been possible to retain a patient in University Hospital for study purposes alone. This has not precluded the completion of significant research on patients in the hospital. Such research has been done, however, only during the time that the patient required hospitalization for the treatment of his illness. This has limited the type of endeavor. Specifically, it has precluded metabolic studies which are essential in the chemically oriented atmosphere of present day clinical research. While this limitation has been severe, it has been felt intensively by only a few members of the faculty. The State of Arkansas could not solve this problem alone. Whether one agrees or not, the pattern of medical school economy appears fairly well established. Educational functions receive University support, service functions receive private or state or local governmental support and research functions are supported externally. Private citizens, voluntary health agencies and the federal government all support medical research. It is no secret that the federal government has been assuming a larger and larger share of total research support in recent years. While the number of beds is small, ten to twelve, the impact of the studies being carried out in those beds is expected to be great and lasting. One may be disturbed by the expansion of federal financing in our medical school. It cannot be said, however, that this work fails to deserve support. Administration of the funds is strictly in the hands of the local faculty. The people concerned are dedicated clinicians and established teachers with a deep sense of responsibility to their patients and to this scientific research. They are well qualified to render the necessary administrative decisions.

While this new facility is admittedly small, it probably will contain the most concentrated group of excellent teaching cases anywhere to be found. By definition the patients are under intensive study. As a model operation it is assured that patient, attendant, nursing and physician

morale will be high. The unit is open for the review of physicians from Arkansas and elsewhere. It is a part of your medical community and as such part of your medical responsibility. You are cordially invited to visit and become familiar with what is being done. From time to time you may be requested to help supply suitable patients for study. With support from the physicians of Arkansas, this small clinical unit will add materially to the overall progress of medical science.



#### Dr. Saltzman Gets National Elks Position

Dr. Ben N. Saltzman of Mountain Home has been appointed to membership on the Youth Activities Committee of the Grand Lodge of Elks. The appointment was made July 15, during the national convention of the Grand Lodge at San Francisco.

#### Dr. Fowler Opens Office

Dr. W. Gerald Fowler opened his office in Huntsville, Arkansas, for the general practice of medicine on September 3rd. Dr. Fowler is a graduate of the University of Arkansas School of Medicine. He completed a rotating internship at St. Vincent Charity Hospital in Cleveland, Ohio, a one year internal medicine residency at Crile Veteran's Administration Hospital in Cleveland, and spent two months as a pediatric resident at the University of Arkansas Medical Center prior to entering private practice.

#### Dr. Dinning Leaves for Thailand

Dr. James S. Dinning, head of the Department of Biochemistry at the University of Arkansas Medical Center, left for Thailand in September to aid in developing the Thai graduate medical education program.

Dr. Dinning, as assistant dean of the University of Arkansas graduate school, is responsible for the graduate program at the Medical Center in Little Rock.

The Thai government requested that the Rockeseller Foundation secure an advisor for its graduate medical training and the Foundation, which is financing the project, selected Dr. Dinning.

He will be stationed at the University of Medical Sciences in Bangkok and also will aid in developing a biochemistry research program at the University.

Storm Whaley, University vice president for health sciences, said that "the University of Arkansas Medical Center is indeed gratified at this further recognition of one of its finest young scientists. We are looking forward to Dr. Dinning's return to us with further enriched experience."

Earlier this year, Dr. Dinning was decorated by King Hussein I of Jordan for his study and treatment at a Jerusalem hospital of children suffering from a certain type of anemia.

Whaley said Dr. Dinning was granted leave without pay from the University to participate in the Thai project.

#### Drug Firm Grants \$5,150 to U. of A.

A California drug firm has granted \$5,150 to the University of Arkansas School of Medicine for a study of new agents in the treatment of psoriasis, a chronic skin disorder.

The grant, from Syntex Laboratories, Inc., of

Palo Alto, goes to the Division of Dermatology and the study will be under the supervision of Dr. Calvin Dillaha, clinical professor and division head.

Dr. Dillaha said the study is a "Cooperative undertaking between a team of physicians in the dermatology division and the drug firm to develop new topical agents in the management of psoriasis."

The one-year project will be carried out at the Medical Center and the Little Rock Veterans Administration Hospital.

#### ESTIMATED COSTS FOR EXPANSION AND RENOVATION OF EDUCATIONAL AND RESEARCH FACILITIES IN U.S. MEDICAL SCHOOLS 1963-1973

#### H.R. 12

The 3-year version of the Health Professions Educational Assistance Act (H.R. 12) was passed by a substantial majority in the U.S. House of Representatives on April 24, 1963. Action in the Senate is pending. In summary, the Bill as passed by the House provides:

New construction—\$105 million (with not more than \$15 million to be spent in the first year, nor more than \$60 million in the first two years) for new teaching facilities, including teaching hospitals, for: physicians (including osteopaths); pharmacists; optometrists; podiatrists; collegiate nurses, and professional public health

personnel.

Modernization and rehabilitation of facilities for the professions listed above, and dentistry—\$35 million, with not more than \$5 million the first year nor more than \$20 million in the first two years.

Student loans—\$30.7 million for a 3-year program of \$2,000-a-year loans.

Dentist training—\$35 million for new teaching facilities, with not more than \$5 million to be spent the first year nor more than \$20 million the first two years.

The Federal share of funds would be 662/3% for new construction or major expansion, 50% for other construction, and 75% for schools of public health. While the program is not expected to be completed within a specified time, the three-year provision was included so that Congress could periodically review the program.

#### **Estimated Costs of Construction**

To help support the legislation at Congressional Committee hearings during the winter of 1962-63, the AAMC and AMA conducted a joint survey of U.S. medical schools to get an up-to-date estimate of construction needs through 1973. The figures which follow, shown in millions of dollars, were obtained January 1, 1963, from 86 medical schools and apply to two areas:

	Edu-	
Construction	cational	Research
Area	Facilities	Facilities
1. New facilities	\$412.1	\$394.6
2. Modernization and rehabilitation	70.5	81.7
TOTAL	\$482.6†	\$476.3

†This sum is in substantial agreement with the \$518 million estimate for comparable construction costs ob-

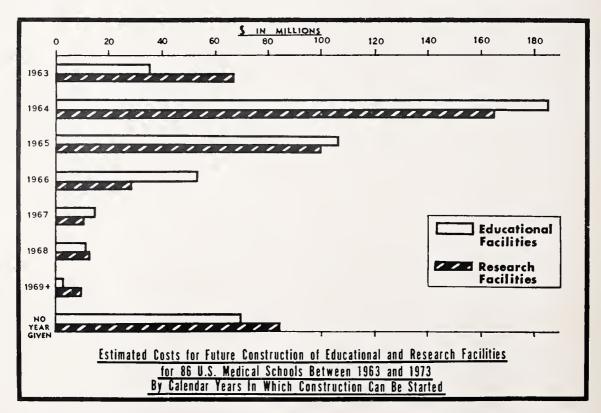


FIGURE 1

tained from existing schools in 1961 and reported in Datagrams Vol. 3, No. 8, Feb. 1962.

#### **Matching Funds**

Further, the schools were asked what proportion of funds they might raise to match Federal grants. Most indicated they could raise up to 33% for educational and from 33% to 50% for research facilities. A few schools indicated they had no sources of matching funds.

Submitted by the Division of Operational Studies of the AAMC, Evanston, Illinois.

#### **Increased Enrollment**

Increase in first-year enrollment resulting from the increased construction varied by school from 5% to 100%, with an overall average of 20-25%, or an average estimated increase of approximately 2,000 first-year students.

Further, the schools estimated that if the Federal program is enacted, the graduate student enrollment could be more than doubled.

In the survey, the schools also were asked to project their financial needs by years. Table 1 and Figure 1 show their response:

TABLE 1 ESTIMATED COSTS FOR FUTURE CONSTRUCTION FOR 86 U.S. MEDICAL SCHOOLS 1963-73 BY CALENDAR YEARS IN WHICH CONSTRUCTION CAN BE STARTED

(Thousands of Dollars)

		( 2 110 210 1111 1210			
Year 1963	No. of Schools	Educational Facilities \$ 35,775	No. of Schools 9	Research Facilities \$ 66,060	Total \$101,835
1964 1965	28 22	185,997 108,463	25 20	164,560 99,735	350,557 208,198
1966	11	52,450	5	28,573	81,023
1967 1968	$\frac{4}{3}$	15,300 11,900	$\frac{4}{2}$	$11,\!100 \\ 13,\!040$	26,400 24,940
1969 No Year	1	3,247	4	9,702	12,949
Given	10	69,519	$\frac{17}{22}$	83,497	153,016
TOTALS	86	\$482,651	86	\$476,267	\$958,918

‡Irrespective of sources of income

NOTE: Responses indicating 1962 as a starting date have been transferred to the 1963 grouping.

#### ANSWER-Electrocardiogram of the Month

RATE-65 RHYTHM: Sinus

PR-.19 sec. QRS: .19 sec. QT: .48 sec.

INTERPRETATION—Abnormal. Left bundle branch block.

COMMENT—Patient was referred with clinical diagnosis of "myocarditis." This can result in conduction defects such as bundle branch block, although the most common cause in an adult, by far, is coronary disease.



#### Thirteenth Annual Meeting of Medical **Library Association**

The program for the thirteenth annual meeting of the Medical Library Association, Southern Regional Group will feature Robert B. Austin, for many years at the National Library of Medicine, Washington, D.C., as banquet speaker. The conference will be held October 25-26, 1963 at the Albert Pike Hotel, Little Rock—the University of Arkansas Medical School serving as host.

Social get-togethers will be held at the Albert Pike Hotel, guests of the University of Arkansas Medical Center Library; and The Top of the Rock Club, guests of the J. A. Majors Company.

#### Medical College of Georgia Plans Series of **Courses for Winter**

The Medical College of Georgia, Department of Continuing Education, has planned a series of five postgraduate courses for the fall and winter 1963-64. These are:

Psychosomatic Medicine Conferences

12 weekly sessions beginning October 9, 1963, Wednesday Evenings, 7:30-9:00.

ANSWER-What is Your Diagnosis?

Case No. 7

Diagnosis: Paget's disease

X-Ray Features: The entire left side of the pelvis is abnormal with complete sparing of the right side. The cortex is thickened and the trabeculae are course. Some cyst-like areas are present between the coarsened trabeculae.

The picture is typical of Paget's disease and the severe involvement of one bone with adjacent bones being normal is quite common. The pelvis is the most frequent area of involvement.

## Fractures in General Practice—October 22-24, 1963

Guest Faculty:

Walter P. Barnes, Jr., M.D., Orthopedic Surgeon, Macon. Ga. D. Keith McElroy, M.D., Asst. Clin. Professor of Surgery (Orthopedics), Columbia Presbyterian Medical Center, New York, N. Y.

#### Thirteen Cardiacs—January 14-16, 1964

Guest Faculty:

Harvey Estes, M.D., Professor of Medicine, Duke University School of Medicine. S. E. Gould, M.D., Visiting Professor of Pathology, University of Miami School of Medicine. Bruce Logue, M.D., Professor of Medicine, Emory University School of Medicine. J. Edwin Wood, M.D., Professor of Medicine, University of Virginia Med-

#### Hypertension and its Complications – February 10-14, 1964

Guest Faculty:

Edward D. Freis, M.D., Senior Medical Investigator, Veterans Administration Hospital, Washington, D. C. John Eager Howard, M.D., Professor of Medicine, Johns Hopkins University School of Medicine. Floyd R. Skelton. M.D., Professor of Pathology, University of Buffalo School of Medicine. Cheves M. Smythe, M.D., Dean, Medical College of South Carolina. Elbert P. Tuttle, Jr., M.D., Director, Georgia Heart Association Laboratory for Cardiovascular Research, Emory University School of Medicine.

#### Obstetric Problems in Private Practice—February 18-20, 1964

Guest Faculty:

Charles E. Flowers, M.D., Professor of Obstetrics and Gynecology, University of North Carolina School of Medicine.

Most courses are accredited by the American Academy of General Practice. Registration is limited to a small group for close participantfaculty communication. Application may be made by contacting Dr. Claude-Starr Wright, Director, Dept. of Continuing Education, Medical College of Georgia, Augusta, Georgia.

#### Maternal and Child Health Teaching Program

The University of California School of Public Health at Berkeley offers a 9-12 months full time educational program to prepare specialists in maternal and child health and leading to the degree of Master of Public Health. This program is sponsored by the United States Children's Bureau.

The teaching program is primarily intended for physicians, but qualified members of other health professions may be accepted on an individual basis.

The minimum duration is nine months spent at the School of Public Health in Berkeley. Students are encouraged to devote an additional three months to field work in selected state and local health agencies.

Inquiries for further information about this

program may be addressed to Dr. Helen M. Wallace, Professor of Maternal and Child Health, University of California School of Public Health, Earl Warren Hall, Berkeley 4, California.

#### Southern Medical Association Will Hold **Dinner in New Orleans**

Dr. Bascom Ráney of Jonesboro has announced that the Southern Medical Association's Arkansas Dinner will be at 7:00 p.m., Tuesday, November 19 at the Hotel Monteleone in New Orleans.

The Southern schedule includes a tour of River Road plantations Monday afternoon, a President's luncheon Tuesday followed by a tour of the Little Theater featuring talks on history, local foods and customs, a Doctor's Day luncheon Wednesday, followed by a fashion show in the Orleans Club and the presidents dinner-dance Wednesday night.

#### Mid-Atlantic Section of International College of Surgeons Meet

The Mid-Atlantic Section of the International College of Surgeons will hold its next meeting at the Homestead Hotel, Hot Springs, Virginia, on November 7, 8, 9, 1963. The medical and surgical profession are cordially invited to attend.

#### **Boone County Medical Society Plans Program**

Doctors and their wives planning to attend the homecoming football game at Fayetteville on Saturday, November 23, 1963, are cordially invited to stay at Harrison Friday and Saturday nights. The Boone County Medical Society will present a medical program Friday night and Saturday morning. The driving time from Harrison to Fayetteville is an hour and one-half.

Reservations should be made in advance and these places may be called: (1) Holiday Inn-Harrison, Highway 62-65 North; (2) Siesta Motel-Highway 62-65 South; (3) Oasis Motel-Highway 62-65 South; (4) Harrison Motor Court-310 No. Walnut, Harrison; (5) Seville Motor Hotel—302 No. Vine Street, Harrison.

The Boone County Medical Society's program will start at 7:00 p.m. Friday night with registration and a social hour at the Holiday Inn. At 8:00, there will be a buffet supper at the Inn, and at 9:00 there will be the scientific program. Dr. William A. Hudson from Harrison and Dr. Deane D. Wallace from Little Rock will speak. Saturday morning at 8:00 there will be the grand rounds of the Boone County General Hospital, and visits to Hillcrest and Harrison Nursing

Homes. Saturday evening after the football game, there will be a social hour and dinner at the Seville Motor Hotel.

#### Announcement of Correspondence Study Program for Medical Assistants

The University of Arkansas Division of General Extension is pleased to announce to the Arkansas Medical Assistants Society and to the Arkansas Medical Society that a program has been worked out whereby all the courses prescribed by the National Association of Medical Assistants will soon be available by correspondence to all medical secretaries and medical assistants who wish to enroll. The first course will be available by August 15, 1963. The other two courses will be ready by early fall.

The University believes that this program is a good one and one that will reach many who cannot now attend classes. Full information may be obtained by writing to the Division of General Extension, University of Arkansas, Fayetteville.

#### Interstate Offers Varied Program for GPs

The 48th annual Scientific Assembly of Interstate Postgraduate Medical Association, to be held at the Palmer House, Chicago, October 21-24, offers 19 and 3/4 hours of varied teaching (and A.A.G.P. Category II credit) for a registration fee of \$10. The program is especially suited to the needs of generalists, as all lectures, panels and clinics are closely related to medical problems familiar to the physician who does not devote his time to a single specialty. Panels on "Neck, Shoulder and Arm Pain," "Fractures and Dislocations in Children" and "The Pros and Cons

in the Use of Anticoagulants" are important parts of the three and one-half day program.

Interstate is not a "membership organization," but offers an annual teaching program for practitioners interested in a varied review of new developments in the major branches of medicine. The 1963 Assembly program offers educational exposure to more than 50 prominent medical educators, as teachers.

Those interested in full details of the program are urged to write for a brochure, by addressing a postal to N. A. Hill, M.D., Secretary, Interstate Postgraduate Medical Association, Box 1109, Madison 1, Wisconsin.

#### Thirteen Courses for Physicians will be Offered

Thirteen courses for physicians will be offered by the Department of Continuing Education of the University of Tennessee Medical Units during the remainder of 1963 and the first half of 1964.

Scheduled during 1963 are Anesthesia for the General Practitioner, September 2-6; Endocrinology-Diagnosis and Treatment, October 9-11; Pediatric Hematology, October 28-29; Allergy, October 30-November 1, and Emergency Surgery-Acute Injuries, November 6-8.

For 1964, the following are scheduled: Radiology, March 9-13; Surgery of the Hand, March 19-21; Obstetrics and Gynecology, March 25-27; Pediatric Allergy, April 1-3; Fractures and Dislocations, May 13-15; Intensive Review of the Science of Anesthesiology, May 18-22; Psychiatry, May 27-29, and Emergencies in Medicine, July 15-17.



#### PERSONAL AND NEWS ITEMS

#### Dr. Hesson Plans for Clinic and Office Building

Dr. John D. Hesson announced in July his plans for constructing an office building and clinic in Rison, Arkansas. Dr. Hesson, who is now in his third year of the practice of medicine, said that construction of the building should be completed by October.

#### Dr. Hout Joins Ouachita Clinic in Camden

Dr. Judson N. Hout has joined with Dr. L. E. Drewrey and Dr. James Guthrie for the practice of Medicine and surgery at the Ouachita Clinic in Camden.

Dr. Hout was born in 1935 at Newport, Arkansas and attended school there. He received his

undergraduate schooling at the University of Arkansas where he was a member of Kappa Sigma Fraternity. He graduated from the University of Arkansas School of Medicine in Little Rock, in 1960 and interned at Hillcrest Medical Center in Tulsa, Oklahoma.

Dr. Hout served in the Air Force from August 4, 1961 until August 3, 1963 at Barksdale Air Force Base in Shreveport.

#### Dr. Hickman is Named Health Officer

Dr. James H. Hickman of Walnut Ridge was appointed part time Lawrence County health officer last week by the state Board of Health.

#### Dr. Jesse McNiel Accepts Pediatrics Residency at Memphis Hospital

Dr. Jesse McNiel, who finished his service in the Army as a captain in the Medical Corps in August, has accepted a residency in pediatrics at John Gaston Hospital in Memphis.

#### Dr. Harris Joins Newport Hospital Staff

Dr. Willie R. Harris, recent graduate of the University of Arkansas Medical School, has joined the staff of Harris Hospital in Newport.

Dr. Harris is a native of Augusta where he graduated from Augusta High School in 1948. He joined the United States Air Force after graduation and served in Korea until 1955.

Dr. Harris then enrolled at Missouri State University and graduated Cum Laude with a bachelor of science degree in 1957. He entered the University of Arkansas Medical School and received his M.D. degree in 1961. He then served two internships, one in medicine and pediatrics, and one in surgery and obstetrics.

#### Dr. Merlin Kilbury, Jr. Takes Medical Post

Dr. Merlin J. Kilbury, Jr., has been named medical director of the Republic Life Insurance Co. of Little Rock. Merlin was born in Little Rock, attended Central High School in Little Rock, Little Rock Junior College and Vanderbilt. He was graduated from the University of Arkansas Medical School in 1944.

He is certified by the American Board of Surgeons, a Fellow of the American College of Surgeons, a member of the Arkansas Chapter of the American Cancer Society and the Pulaski County Chapter of the American Cancer Society.

#### **Psychiatrist Appointed for Center**

Dr. R. Fred Broach, a psychiatrist who is a native of Bearden, has been appointed medical director of the Pulaski County Guidance Center, which will open within the next few months in the building being vacated by the North Little Rock Health Department. The Center staff also will include a psychologist and a social worker. Its purpose will be to provide early recognition, study and treatment of children who have difficulties adjusting in academic, emotional or social areas. Its services will be available to all residents of Pulaski County through County agencies and through schools, courts, and public health and welfare agencies.

Planning and developing the Center has been a project of the Family Life Division of the Health and Welfare Council of Pulaski County. The Center's president is MSGR. James E. O'Connell.

#### **New Clinic Building in Stuttgart**

A new clinic building is being constructed by the M. C. John Clinic in Stuttgart. The building, which will accommodate six physicians, is next to the hospital. Members of the clinic staff are: Dr. M. C. John, Jr., Dr. Fred Stone, Dr. Paul Millar, and Dr. F. M. Henderson.

#### Dr. J. H. Burge is President of Medical Group

Dr. J. H. Burge was elected president of the Arkansas Chapter of the American College of Surgeons at the annual meeting of the group in Hot Springs last week.

#### Dr. James Davis to be Associated With the New Ash Flat Medical Center

Sharp County—the only county in Arkansas without a physician in recent years—has now joined the ranks of the other seventy-four counties in the State having the services of a qualified physician. The New Ash Flat Medical Center at the Junction of U. S. Highways 62 and 67 just north of Ash Flat is completed and will be staffed by Dr. James H. Davis who is moving into the area.

Dr. Davis will also be associated with Dr. Carl B. Arnold and Dr. David E. Ducker in Salem, Arkansas.

#### 50 Year Club of American Medicine Meets

Dr. J. H. McCurry of Cash, Arkansas, Secretary of the 50 Year Club of American Medicine, reports that the meeting of the group during the AMA convention in Atlantic City was highly successful.

Dr. John Wilson of London discussed England's socialized medicine and described it as a great disappointment. Dr. Russell B. Roth, member of the AMA House of Delegates and the Speaker

\$280.33

of the House of the Pennsylvania Medical Society, addressed the group on "Old Age and Friendship." The immediate past president of the AMA, Dr. George Fister and the current president, Dr. Edward Annis, also spoke to the group meeting which was held during lunch.

The group announced that it had donated \$200 to the student loan fund which, with the matching arrangement set up by the AMA, will create a \$2,500 loan guarantee.

The club plans to hold its next meeting in connection with the AMA convention in San Francisco in June 1964.

## Contributors to the AMA Education and Research Foundation During June 1963

Dr. Kenneth R. Duzan, El Dorado	\$ 15.00
Dr. Henry G. Hollenberg, Little Rock	10.00
Dr. E. L. Hutchison, Pine Bluff	10.00
Dr. Robert D. Jones, Little Rock	10,00
Dr. Warren Riley, El Dorado	6.00
Dr. G. A. Robinson, Harrison	5.00
Dr. Kenneth Siler, Harrison	5.00
Dr. Joe P. Stanley, North Little Rock	10.00
Dr. H. W. Thomas, Dermott	10,00
Mrs. H. W. Thomas, Dermott	1.00
Mrs. Lee Parker, McGehee	1.00
Pulaski County Medical Auxiliary	105.33
Sebastian County Medical Auxiliary	77.00
Chesley Pruet, El Dorado	15.00

Arkansas' Own Dr. Rhine

An eighty-seven year old country doctor whose horizon has encompassed community, state, and nation has begun his 66th year of medical practice. Dr. T. E. Rhine of Thornton, Arkansas is also the only surviving World War I doctor of his medical company who served together in England.

Most outstanding of the many honors accorded him through the American Medical Association was at Washington, D. C. Here he placed second in the nation as doctor of the year to a Decatur, Illinois physician, Dr. Hall, with whom he still corresponds.

Dr. Rhine has delivered more than 7,000 babies, enough to make up the population of a small city. He has delivered numerous sets of twins and two sets of triplets. He has also delivered forty entire families, including the father and mother. A local American Legion Post is made up of boys delivered by Dr. Rhine and who served in World War II. A graduate of Fordyce High School, he received his medical degree at the old Memphis Hospital Medical Hospital, now the University of Tennessee. From time to time he has done special study at Tulane University in New Or-

leans and New York Polyclinic and Hospital in New York City. He is the only one of the medical graduates still practicing that began a career with him and he knows many who began years after he did who are now retired.

For over half a century he has been a member of the American Medical Association, the Arkansas Medical Society and the Southern Medical Association. He holds life membership in all three. Dr. Rhine has proven to be the public's ideal in a doctor—a life dedicated not to gaining wealth but to serving mankind.



Union County Medical Society announces that DR. FRED F. COOK has been added to its roster of members. A native of Ringgold, Louisiana, he received his pre-medical education from Centenary College in Shreveport, Louisiana. His M.D. degree was received from Louisiana State University School of Medicine in 1954. Dr. Cook practiced in Mansfield, Louisiana from 1955-1959 and in Bastrop, Louisiana from 1959-1961. His office is now at Strong Clinic in Strong, Arkansas. He is a general practitioner.

DR. WORTHIE R. SPRINGER, JR. is a new member of Pulaski County Medical Society. A native of Little Rock, he received his M.D. degree from the University of Arkansas in 1961. He has practiced in Pontiac, Michigan. Dr. Springer's office is now located at 103 East Second Street in North Little Rock. He is a general practitioner.

DR. CARL L. WILLIAMS is a new member of the Sebastian County Medical Society. A native of Schenectady, New York, he received his preliminary education from Henderson College in Arkadelphia, Arkansas. In 1954, he received his M.D. degree from the University of Arkansas Medical School. His office is now located at 500 Lexington Avenue in Fort Smith. Dr. Williams'

specialty is thoracic and cardiovascular surgery.

A new member of Sebastian County Medical Society is DR. CLAUD S. HEFFINGTON. Born at Havana, Arkansas, he received his pre-medical education from the University of Arkansas. His M.D. degree was received from the University of Arkansas Medical School in 1956. He practiced at Ozark, Arkansas, from 1957-1959 and he was in residency training from 1959 until 1962. He is a psychiatrist. Dr. Heffington's office is located at 1500 Dodson in Fort Smith.

Sebastian County Medical Society announces that DR. CHARLES H. FLOYD has been added to its roster of members. A native of Capps, Arkansas, he received his preliminary education from the University of Arkansas. His M.D. degree was obtained from the University of Arkansas Medical School in 1955. He served in the U. S. Army from 1960-1962. Dr. Floyd's specialty is pediatrics. His office is at 818 Lexington in Fort Smith.

DR. MAX R. McGINNIS is a new member of Pulaski County Medical Society. Born at Rondo, Arkansas, his pre-medical education was received from the University of Arkansas. In 1957, he received his M.D. degree from the University of Arkansas Medical School. His office is located at 1429 West 7th Street in Little Rock. Dr. McGinnis' specialty is obstetrics-gynecology.

Pulaski County Medical Society announces that DR. FREDERICK J. KITTLER is a new member. He is a native of Shreveport, Louisiana, and he received his pre-medical education from Spring Hill College. His M.D. degree was obtained from Louisiana State University in 1957. Dr. Kittler's specialty is pediatrics. His office is at 4001 West Capitol in Little Rock, Arkansas.

DR. R. FRED BROACH is a new member of the Pulaski County Medical Society. A native of Bearden, Arkansas, his preliminary education was received from Henderson State Teachers College in Arkadelphia. He obtained his M.D. degree from the University of Arkansas Medical School in 1944. Dr. Broach's specialty is psychiatry and his office is located at the University of Arkansas Medical Center, Little Rock.

A new member of Cleburne County Medical Society is DR. DORIS A. BALDRIDGE. She is a native of Wynne, Arkansas, and received her pre-medical education from Hendrix College. Her M.D. degree was obtained from the University of Arkansas Medical School in 1939. She is a

general practitioner with her office in Heber Springs, Arkansas.



#### Mrs. Paul Gray to be Honored at Arkansas Dinner

At the Southern Medical Association's Arkansas Dinner in New Orleans, November 19, Mrs. Paul Gray, incoming president of Southern Medical Auxiliary, will be honored.

Mrs. Gray has been a member of the Independence County Medical Auxiliary twelve years, having been president once and vice-president twice. She has served as state legislation chairman, members-at-large chairman, parliamentarian, vice-president, and was president 1959-60. Currently she is on the president's advisory committee. In Southern she has been Doctors' Day chairman, Research and Romance of Medicine chairman, secretary, vice-president, and president-elect.



### BOOK REVIEWS

CANCER, A general Guide to Research and its Treatment, Edited by Professor N. N. Petrov, Translation edited by W. J. P. Neish, University of Sheffield, A Pergamon Press Book, pp. 387, illustrated, published by The MacMillan Company, New York, 1962.

This textbook is by a Russian author and is translated by W. J. P. Neish. This is an interesting text and presents a review of world literature pertaining to cancer from a point of view of a Russian scientist. The book has a large number of references and a moderate number of illustrations. It includes many facets concerning tumor, including such things as morphology, the influence of the nervous systems on the genesis of tumor, experimental tumor formation, treatment of tumor and many other related subjects. This book will be of considerable interest to the general surgeon and to those interested in Oncology. It will not be of much interest to medical students or general physicians.

CLINICAL EXAMINATIONS IN NEUROLOGY by Members of the Sections of Neurology and Section of Physiol-

ogy, Mayo Clinic and Mayo Foundation for Medical Education and Research, Graduate School, University of Minnesota, Rochester, Minnesota, Second Edition, pp. 396, published by W. B. Saunders Company, Philadelphia and London, 1963.

This book is written in an effort to explain the nature of a complete neurological work-up. It does not attempt to teach the pathology of the nervous system. It is well written and easy to read. It admirably succeeds in its goal. Of particular interest is the section on electromyography, electroeucephalography, and biochemical and pharmacological aids. This book is quite outstanding as a textbook for medical students and interns. It would be of some value to the general physician and internist.

ORGANIZATION AND ADMINISTRATION IN WORLD WAR II, by Blauche B. Armfield, M.A., pp. 613, published by U.S. Government Printing Office, Washington 25, D.C.

This book describes the organization and administration of the Department of Medicine in World War II. It is of particular interest to physicians in the military service. It is of historic interest to physicians who served in World War II. It discusses some of the personalities who partici-

pated in the various theaters of operations.

Although well written and organized, this book is of limited interest to the practicing physician.

DISEASES OF THE CHEST, Second Edition, by H. Corwin Hinshaw, M.D., Ph.D., D.Sc., Clinical Professor of Medicine, University of California School of Medicine, San Francisco, and L. Henry Garland, M.B., B.Gh., M.D., Clinical Professor of Radiology, University of California School of Medicine, San Francisco, pp. 798, illustrated, published by W. B. Saunders Company, Philadelphia and London, 1963.

Although this book is labeled DISEASES OF THE CHEST, it really should be labeled Diseases of the Respiratory Tract. It particularly emphasizes of course, pulmonary disease. It has nothing pertaining to the heart and circulatory system. The text is well written and is inclusive; it is in no way unique. The organization of the book is rather perfunctory. There is an interesting chapter on pulmonary function testing. As is customary, there are sections on the means of examining the lungs and respiratory tract. This text is a very good text and is recommended as a text of diseases of the lung to medical students and practicing physicians.



#### The Hilum and the Large Left Ventricle

J. L. Doppman, and J. P. Lavender, *Radiology* 80:931 (June) 1963

Examination of the right hilus in 79 controls and in 70 patients with left ventricular disease revealed that the normal and the obviously abnormal hili can be readily differentiated. The straightening or convexity of the lateral border of the hilus due to distention of the upper lobe veins was obvious in all patients with left ventricular failure evidenced by clinical findings or catheterization data. An intermediate hilar configuration showing minimal but definite changes was found in patients with evidence of left ventricular disease but few symptoms. It seems probable that these represent minor degrees of left ventricular insufficiency reflected in the hilus.

#### A Critical Evaluation of Lymphangiography

B. Schaffer, P. R. Koehler, R. Daniel, G. T. Wohl, E. Rivera, W. A. Meyers, and J Skelley, *Radiology* 80:917 (June) 1963

Clinical and experimental work with lymphangiography done at the Philadelphia General Hospital during the past 2 years has been evaluated. The clinical, radiological, and histological correlations have demonstrated that lymphangiography is accurate in the diagnosis of lymphomas but of limited value in patients with carcinomas. The complications from this procedure, which were not severe in most cases, are also reported. Animal experimentation and histological studies have demonstrated no apparent tissue damage due to the oily contrast medium. The histogical material was obtained at surgery and at autopsy. The time interval between lymphangiography and the histological examination varied from 12 hours to 2 years. The results of preliminary studies designed to determine the fate of the contrast agent in the body, utilizing radioactively tagged Ethiodol, are reported. The question of posible spread of cancer as a result of this procedure is also discussed.

#### Intrathoracic Mesothelioma

W. B. Hutchinson and M. J. Friedenberg, *Radiology* 80:937 (June) 1963

The clinical, radiographic, and pathological findings in 20 cases of intrathoracic mesothelioma are reported. Benign mesotheliomas are occasionally calcified, rarely associated with pleural effusion, and never destroy or erode bone. They vary considerably in size, the large ones often displacing the heart and mediastinum. Malignant mesothelioma is characterized by thickening and fixation of the involved serosal surface and, in our series, was not associated with significant shift of the heart or mediastinum in spite of the great propensity for rapid reaccumulation of fluid following thoracentesis or pericardiocentesis.

### TUBERCULOSIS



#### ABSTRACTS

Sponsored by Arkansas Tuberculosis Association

#### NATIONWIDE HISTOPLASMIN SENSITIVITY

State-to-state variations in histoplasmin sensitivity are shown by skin test results in a large group of Navy recruits. An attempt was made to estimate the frequency of histoplasmal infection and of other cross-sensitizing infections in recruits from each state.

Results of skin testing with histoplasmin and the diagnosis of clinical cases of histoplasmosis have made it clear that where people live is of prime significance in the risk of becoming infected with the fungus  $Histoplasma\ capsulatum$ .

In the study here reported, an attempt was made to depict state-to-state variations in indigenous sources of sensitivity to histoplasmin as measured by reactions among young men who had lived all their lives in one state.

With the cooperation of the U.S. Navy, 306,226 United States Navy recruits on entering training centers at Great Lakes, Ill., and San Diego, Calif., were given several skin tests, including histoplasmin. Among white recruits between 17 and 21 years of age, 212,462 had lived all their lives before entering the Navy in only one state in the conterminous United States.

In terms of reactions to histoplasmin, the highest prevalence rates among lifetime residents of one state were in the east-central parts of the country — Missouri, Indiana, Kentucky, Tennessee, and Arkansas—where more than 55 per cent reacted. (Illinois would have been included except for the low prevalence from the Chicago area.) In many of the adjoining states the rates ranged from 29 to 45 per cent, in others from 11 to 25 per cent. Toward the southeast the frequency of reactors dropped more rapidly, to less than 11 per cent in Georgia and less than 4 per cent in North Carolina. The rates were also below 4 per cent in the northwestern and New England states, and higher in the Mexican border states.

Phyllis Q. Edwards, M.D., and Carroll E. Palmer, M.D., Public Health Reports, March, 1963.

#### CROSS-REACTIONS

A reaction to histoplasmin does not necessarily represent sensitivity caused by infection with *H. capsulatum*; cross-reactions are known to occur as a result of other systemic mycotic infections. Unless account is taken of possible cross-reactions, the prevalence of histoplasmal infection, as determined by the percentage of "reactors," may be grossly overestimated for some areas.

A theoretical distribution of "negative" reactions was based on combined results for recruits from five states in the northwest (Washington, Oregon, Idaho, Montana, and Wyoming) and five in New England (Maine, New Hampshire, Massachusetts, Connecticut, and Rhode Island) where the frequencies of significant reactions to histoplasmin were the lowest in the country. After subtracting the "negative" reactions from the distributions for other states, the sizes of the remaining or "positive" reactions were shown to be distributed differently in different parts of the country. For example, in Arizona and New Mexico, there were fewer large reactions but more small ones than in West Virginia and Maryland. Infection with Coccidioides immitis is known to be prevalent in the southwest, and a substantial proportion of the reactions to histoplasmin in this region unquestionably are small because they are cross-reactions. But, as far as is known, Coccidioides does not exist in Louisiana, Nebraska, and the southeast, yet in these regions, too, there was a disproportionate increase in the frequency of small reactions. These should also probably be considered cross-reactions, though not attributable to coccidioidal infection.

#### RESIDENCE HISTORIES CHECKED

The very low frequency of large reactions to histoplasmin in the northwestern states raises some questions as to their source. Because of the high frequency of migration to the northwest from the east-central states (where histoplasmin sensitivity is high), even a few errors of omission



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Research in the Service of Medicine

in the residence histories of the recruits would have a significant effect. Indigenous sources of infection, though a possibility, seem fairly unlikely since the few reactors were widely scattered throughout the region rather than concentrated in single counties or localities. Letters were written to recruits from the northwestern states who had a reaction of at least 5 mm., asking for a detailed list of all places they had ever lived or visited.

Replies were received from 71, or 59 per cent, of the 121 questioned. A history of having been in areas where they might have acquired histoplasmin sensitivity was obtained from 26; of these, 19 had reactions of 8 mm. or more. In contrast, among the 45 who had never been outside the northwest, 14 had reactions of 8 mm. or more. Thus, the larger the reaction, the greater the likelihood that the recruit had been in an area where histoplasmin sensitivity was more prevalent than in his home state. However, if the few scattered reactions found among recruits who had never left the state are in fact evidence of indigenous sources of infection with Histoplasma in the northwest, then such sources would seem to be located in areas where people rarely go.

OPPOSITE SITUATION IN NEW ENGLAND

Similar letters were sent to a corresponding sample of recruits from the New England states

where the frequency of reactions was low. Of 34 who replied, only 8 had ever lived or visited in states outside New England, and 6 of the 8 had reactions of 8 mm. or more. However, of the total of 18 with reactions of 8 mm. or more, 12 had never left the area.

Thus, in contrast to the northwest, it seems likely that sources of infection are present in one or more of these states.

From the analysis in the present report, based on the use of a repetitive analog computer to estimate the frequencies of specific reactions and cross reactions, it becomes possible to account for some of the otherwise incomprehensible variations in the distributions of reactions to histoplasmin among population groups in different geographic areas. *Coccidioides* infection as the predominant cause of cross-reactions in the southwest is readily acceptable. The task is to be on the alert, particularly in the Gulf and southeastern states, for signs of other fungi that may be infecting and sensitizing a good many people and, perhaps, causing clinically recognizable disease in only a few of them.

It also appears that the epidemiology of histoplasmosis, as well as other fungus infections, may well be strongly affected by the density and movement of populations in regions where the organism exists naturally.



### Prevention by Cortisone of the Changes in Cartilage Induced by an Excess of Vitamin A in Rabbits

L. Thomas, R. T. McCluskey, J. Li, and G. Weissmann, *Amer J Path* 42:271 (March) 1963

Acute hypervitaminosis was induced in 2 groups of young albino rabbits by vitamin A palmitate preparations administered by gastric intubation. The rabbits in group 1 received, each, 500,000 IU during 6 consecutive days, and those in group 2 were additionally treated with a daily injection of 12.5 mg cortisone. A third group received only cortisone, and a fourth remained untreated. The animals were killed by an injection of pentobarbitol sodium on the day following the last treatment.

Moderate or severe depletion of the matrix, in articular and epiphyseal cartilage, and loss of hair were visible in the animals of group 1. Four of them showed collapse of the distal part of the ear, and mild focal depletion of cartilage matrix in sections of trachea was found in 5. Such changes were to a great extent prevented by cortisone in group 2. Rabbits receiving cortisone only, in contrast to previous studies, showed no reduction of metachromatic or basophilic staining, and no cartilage abnormalities were found. A similar experiment, with similar results, was made with vitamin A acid. The protective effect of cortisone in blocking histologic alterations of hypervitaminosis are possibly due to increased stability of lysosomes.

November, 1963

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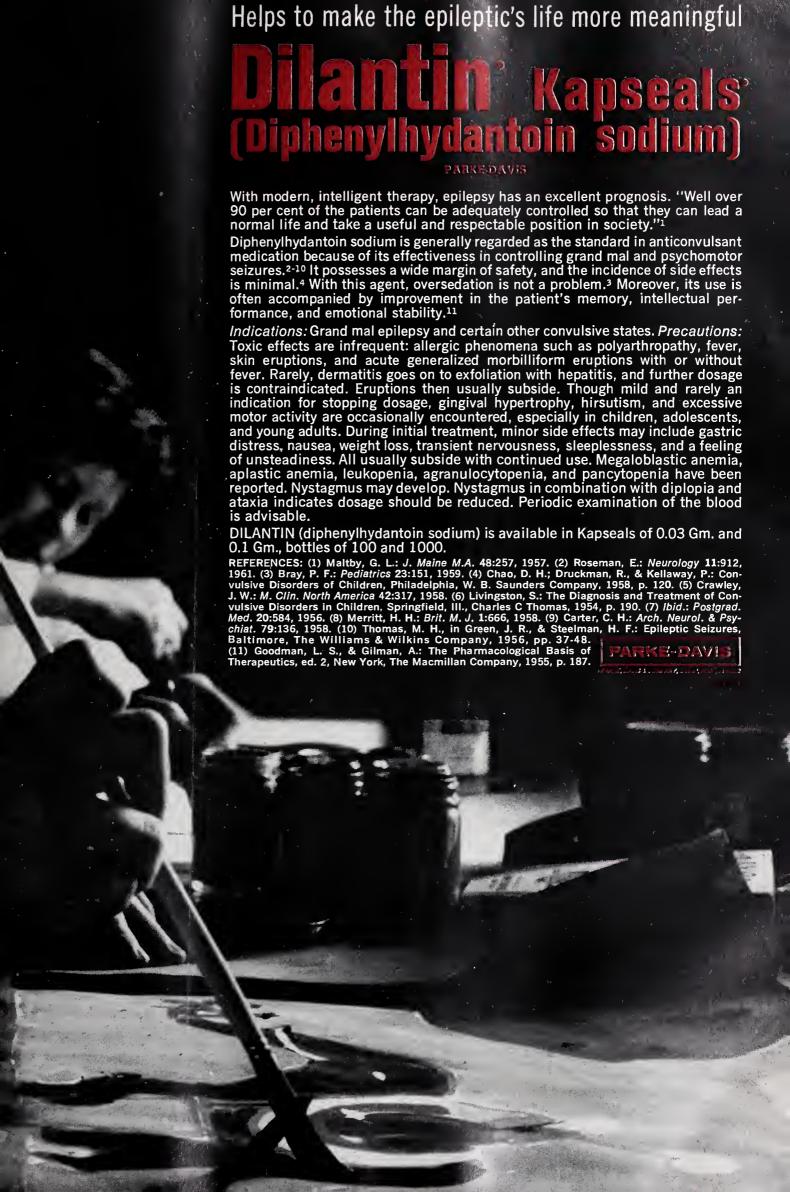
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# THE JOURNAL OF THE ARRANSAS MEDICAL SOCIETY

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## THE PHYSICIAN-ANESTHESIOLOGIST\*

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HE modern, well-trained anesthesiologist has broadened his horizons beyond the confines of a mere skilled technician in the operating room to the far wider field of a physician-anesthesiologist participating in the care of both surgical and medical patients throughout the hospital. True, the primary responsibility of the anesthesiologist is the management of the anesthesia for the surgical patient, but even in this role, he must be a physician in the most comprehensive sense of the word in order to provide the maximum safety for the patient and facility for the surgeon. He must be thoroughly versed in the basic sciences, and skilled in applying this knowledge to the management of each case. He must keep up-to-date on the current clinical and laboratory work and concepts of other physicians and institutions, not restricting his studies to "drug" reports. And, he must learn to critically evaluate new concepts and practices before employing them, for far too many institutions are imposing the silent threat of "publish or perish" on the medical profession. Even more worthwhile than reading the literature is visiting the operating room of other institutions to observe the diversified anesthetic technique being used by others in their daily practice.

In his clinical practice, the first duty of the anesthesiologist is the preanesthetic visit to the patient and, here, akin to all physicians, he must show a genuine interest in his patient, allied with a sympathetic and understanding attitude so that he can allay fears and attain the cooperation and confidence of his patient.

During the visit, the anesthesiologist should record on the anesthetic chart *all* the pertinent information from the patient's hospital chart in addition to recording the results of his own exam-

ination. Having done so, the anesthesiologist must possess a broad understanding of the recognized diseases so that he can accurately evaluate the patient's over-all mental and physical condition and, in turn, judiciously select the most suitable anesthetic agent and technic for a given case. Many operating room deaths are attributable to the failure of the anesthesiologist to recognize the possible effects and consequences of not only the operable disease but also other existing diseases unrelated to the surgical condition.

The following examples of conditions which may impair the patient's myocardial reserve or which require treatment before anesthesia will emphasize the necessity of thoroughly evaluating the over-all condition of the patient before anesthesia, for in any of these instances, small doses of anesthetic agents, slight hypoxia (even from breathholding), change in position, unreplaced blood loss, or inadequate compensatory treatment before anesthesia may result in an irreversible cardiovascular collapse during the induction or maintenance of anesthesia.

The first example is a patient with a history of prolonged bed rest or of chronic infection, in which event, the anesthesiologist should anticipate that the patient has a reduced myocardial reserve as well as the deleterious effects of his particular disease. Then again, muscular dystrophy affects not only the skeletal muscle but also the cardiac muscle. In fact, patients with hypertrophic muscular dystrophy often die of cardiac failure at an early age. Also, remember that pericarditis often is accompanied by epicarditis and myocarditis, an anesthetic hazard, chiefly because of the myocarditis, not because of the tamponade, the commonly recognized culprit.

Prolonged iron deficiency anemia in the young or very old persons causes fatty infiltration of

Presented at the Eighty-Seventh Annual Session of the Arkansas Medical Society, April 22, 1963.

the myocardium. A patient with sickle cell anemia is an extremely poor risk in the event of emergency surgery, for replacement of the sickle cell hemoglobin usually requires several transfusions, given over a two-week period.

A diabetic patient should be properly and carefully prepared before anesthesia with dextros and insulin; if not, he may progress smoothly through anesthesia, and then have a dramatic postanesthetic collapse.

Also, a patient undergoing treatment with steroids should be given an additional supportive dose of his prescribed drugs before surgery, and the anesthesiologist should have Solu-cortef available for administration during the procedure.

A patient with severe hypertension is a likely candidate for a severe drop in blood pressure during anesthesia, and if he is being treated with an antihypertensive drug, the risk is enhanced.

This leads us to another important preanesthetic consideration, that is, the effects of drugs in general and in particular. In the particular case, a carefully obtained, complete anesthetic and other drug history of the patient and of his family may portend the anesthetic course of the patient. For instance, in about one in every five thousand cases, the frequently used muscle relaxant, succinylcholine, has caused an apnea of several hours' duration. This phenomenon is believed to occur in patients who have inherited abnormal pseudocholinesterase instead of the normal pseudocholinesterase which hydrolyzes succinylcholine. Therefore, a patient's family history which reveals an instance of prolonged apnea with succinylcholine should serve as a warning to the anesthesiologist that his patient may be an atypical homozygote.

Another guide in predicting the drug reaction of a nonconformist is the preanesthetic ascertainment of the patient's liver function. There is increasing evidence that old people, alcoholics, even those who rebound slowly from over-indulgence in alcohol are susceptible to liver failure postanesthetically following the administration of any anesthetic agent or vasopressor, or following hypotension, hypercarbia, or anoxia. It is therefore, important to elicit a history of such isolated facts as clay-colored stools.

In general, that is, the cases in which the patient's drug reaction is conformable, preanesthetic consideration of the effects of drugs is still a subject of particular concern, for the anesthesiologist must weigh the consequences of not only the

drugs that he administers but also those that other physicians prescribe for the patient. For example, overdigitalization tends to make the patient's heart more irritable and consequently more susceptible to ventricular fibrillation. Drugs such as epinephrine and calcium chloride given by the surgeon during anesthesia also may cause ventricular fibrillation. Quinidine, on the other hand, is a depressant of the myocardium, and when combined with small quantities of anesthetic agents, especially the barbiturate, halothane, or ether may cause a drop in blood pressure. Some antibiotics produce a prolonged apnea when combined with curare, particularly if the surgeon uses neomyocin parentally during the surgery.

The foregoing examples were not selected because they are the most frequently seen or the most important, but simply to indicate the significance of recognizing disease and drug effects and, in some cases, treating the patient before anesthesia.

To consummate his preanesthetic evaluation, the anesthesiologist consults with other medical attendants on the case. In these relationships, the physician-anesthesiologist must be competent and cooperative, for a harmonious coordination of his activities with those of his confreres is obligatory if the goal is, as it should be, to provide the best possible medical, surgical, and anesthetic care for the patient. By way of illustration, the surgeon will outline his plan relative to maintenance of fluid and electrolyte balance, probable blood loss, duration of surgery, required muscle relaxation, patient position, and the possible use of electrocautery, x-rays, or vasoconstrictors. If a large blood loss is expected, the patient should be grouped and cross-matched, and sufficient blood obtained to enable replacement at the time of the loss. If the surgeon intends to use electrocautery, nonexplosive, nonflammable anesthetic agents should be selected. If the patient is to be placed in the prone position, which is more hazardous than the supine, especially if the patient is obese, the anesthesiologist should plan to employ the endotracheal technic and artificially ventilate the lungs throughout surgery. And, as previously stated, the anesthetic agents selected must be compatible with the drugs to be used by the surgeon.

Then, in accordance with the preanesthetic evaluation of the patient, the anesthesiologist will order the preanesthetic medication and select the most suitable anesthetic agent and technic. The night before surgery we often give the patient a long-lasting, slowly released barbiturate, pentobarbital sodium (Nembutal Gradumets). This ensures a good night's rest and, because of the long-lasting effect, the patient is comfortable and tranquil the next morning when he arrives for induction of anesthesia.

The competent anesthesiologist does not limit himself to the use of one agent and/or one technic, for adaptability is essential to meet the needs of each case. The merits and demerits of the numerous agents and technics available for use is a subject in itself and will not be reviewed here. I have selected for discussion the need of constant monitoring of respiration, circulation, and temperature during the induction and maintenance of anesthesia.

Today, respiration is, in most cases, artificially controlled because of the prevalent use of muscle relaxants and respiratory depressant preanesthetic and anesthetic drugs. Because of this respiratory depressant effect, we use an absolute minimum dosage of these drugs in order to prevent hypoventilation. Moreover, since it is imperative to know at all times if ventilation of the lungs is adequate, we use the rapid infrared carbon dioxide analyzer to furnish a continuous record of the end expired carbon dioxide for the end expired carbon dioxide rises in relationship to the degree of hypoventilation. From physical signs alone, sometimes it is difficult to detect that a patient is suffering from a carbon dioxide excess because incompetent valves, spent soda lime in a machine, or an obstructed airway often cause hypercarbia and hypoxia without the patient showing concomitant significant changes in respiratory rate, blood pressure, or heart rate. There are times when unrecognized chronic hypoxia comes to light only when the patient fails to recover his mental faculties immediately after surgery.

The progressive anesthesiologist monitors continuously the cardiovascular system during induction and maintenance of anesthesia to detect and prevent any condition such as overdosage of anesthetic agent, severe unreplaced blood loss, hypoxia, or hypercarbia which may depress the circulation. The intermittent blood pressure and pulse rate methods alone are inadequate, forcibly demonstrated by the fact that some of the so-called cardiac arrests occur in 30 seconds—between the periodic taking of the blood pressure. The

use of the precordial or esophageal stethoscope is the simplest method of monitoring the changes in the intensity of the sounds, rate, and rhythm of the heart. In addition, confirmatory evidence of cardiovascular changes is alforded by other monitoring methods. We use a plethysmograph attached to a finger or a toe, a method applicable to most patients, which alfords a continuous method of detecting a depression of the blood pressure. The disappearance of a flashing light or the sound of a beeper signifies cardiovascular depression. Other electronic monitors include the electrocardiograph, electroencephalograph, and rapid infrared carbon dioxide analyzer.

Monitoring the patient's temperature with a continuous recording rectal or esophageal thermometer is another valuable safeguard during anesthesia. A patient who has not eaten for a long time before surgery, especially one afflicted with brain injuries or severe vomiting, often has a very low temperature. In some cases, apnea may be a consequence of such a low temperature. But, by far the commoner complication confronting the anesthesiologist is hyperthermia. I have seen two patients whose temperatures rose to 108 degrees F. during comparatively short operations. In neither case was the cause determinable; it may have resulted from the drapes or from some fault in the anesthetic technic. Upon detecting the high temperature, we placed the patient in a tub of ice water, and in both cases, within 15 minutes the temperature dropped to a normal level. Permitting a patient to endure a high temperature results in swelling of the brain and ultimately in postoperative unconsciousness, convulsions, and possibly death.

For the safe conduct of anesthesia, it is incumbent upon the anesthesiologist to use every means available to monitor the respiration, circulation, and temperature in order to detect any adverse changes in the patient's condition. Conscientious monitoring includes the use of the aforementioned electronic monitors *in addition to* watching the accepted clinical signs. In this way, numerous complications will be prevented or detected sufficiently early to permit institution of life-saving remedial measures.

Upon completion of surgery the patient is carefully transferred from the operating room table to the carrier and during the journey to the recovery room he receives the undivided attention of the anesthesiologist. But, the duties of the anesthesiologist do not end here, for the post-

anesthetic care of the patient is an integral part of the anesthetic management. He visits the patient in the recovery room and later on the ward to detect and treat, in conjunction with the attending physician, any complications such as prolonged unconsciousness from depressant drugs, respiratory and circulatory disorders, laryngeal edema following extubation, pulmonary atelectasis, nerve injuries, and other accidental traumatic injuries. The principles enunciated in connection with the preanesthetic evaluation of the patient are equally applicable to the postanesthetic period. When caring for the patient after anesthesia, the anesthesiologist must take into consideration all the possible factors affecting the patient's condition, for, as a rule, management of the patient during this critical time is a cooperative effort on the part of the anesthesiologist, surgeon, and attending physician.

Apart from his anesthetic management of the surgical patient, the physician-anesthesiologist is called upon to assist in many other hospital services. Because of his knowledge of intubation and respiration, he receives emergency calls to treat patients with respiratory difficulty from meningitis, brain tumors, muscle paralyzing diseases, chord injuries, poisoning, epiglottitis, tracheitis, pulmonary edema, aspiration of food, and asthma. In such cases, the first step is to achieve oxygenation by clearing the airway and ventilating the lungs. Also, an endotracheal intubation often is necessary. If the patient's condition improves with the intubation, then a decision can be made regarding the need for performing a tracheostomy and using a respirator. Whether or not to do a tracheostomy often poses a complex problem. If, however, the patient shows signs of marked indrawing of the chest on inspiration, increasing pulse rate, increasingly rapid respiration, and exhaustion, a tracheostomy is generally indicated. A tracheostomy will reduce the dead space, lessen carbon dioxide retention, and the patient will breathe more quietly. Moreover, the trachea can be readily aspirated by the nurse through the tracheostomy tube, and in the event of atelectasis, the patient will cough and expand the atelectatic lung. But do not blindly think that a tracheostomy is a safe procedure that solves all problems, for it is fraught with peculiar hazards. During the last five years alone I have seen three deaths caused by obstruction of tracheostomy

In some hospitals, the management of oxygen

therapy, intermittent positive pressure breathing, and pulmonary function tests have become the lot of the anesthesiologist. These functions are often performed in conjunction with other physicians, but when related to preoperative and post-operative care, the duties usually become those of the anesthesiologist.

Together with the surgeon or attending physician, the anesthesiologist also participates in the treatment of ventricular fibrillation or asystole emergencies arising in the operating room or on the ward. Treatment consists of endotracheal intubation, pulmonary ventilation, defibrillation, cooling of the patient, and the administration of urea, mannitol, or THAM to reduce the edema of the brain.

Another area where the anesthesiologist may be of service is in the control of convulsions. Often a physician not well-versed in the use of barbiturates will attempt to control status epilepticus, convulsions, or tetanus by the long-lasting barbiturates. Because of inexperience in performing effective artificial respiration, he is reluctant to use the shorteracting barbiturates, realizing that a convulsive patient may readily turn into an apneic patient with a small overdosage of barbiturate. When administering barbiturates to one of these patients, the anesthesiologist should always have a ventilator beside him ready for use. We often give small doses of thiopental (Penthothal), thiamylal (Surital), or even methohexital (Brevital) to establish the "final" control of a convulsing patient. We may even give muscle relaxants, in which event, we are prepared to initiate and maintain artificial respiration if indicated.

Another field of endeavor within the province of the anesthesiologist is performance of diagnostic and therapeutic nerve blocks. A diagnostic stellate ganglion block may indicate to the surgeon the advisability of performing a sympathectomy. The stellate ganglion or the lumbar sympathetic nerves may be blocked to relieve painful limbs due to vasospasm, and often relief is obtained following a few blocks. A differential spinal may be done, using 0.2 per cent procaine to block the sympathetic nerves, 0.5 per cent to block the sensory nerves, and 1 per cent to block the motor.

Also, the anesthesiologist may be called upon to help treat the patient comatosed by acute drug intoxication. Obviously, supportive therapy of the circulation and respiration must be instituted. If the patient has swallowed a barbiturate, his stomach must be washed out. In some cases, when the patient has ingested barbiturates with a long-lasting effect artificial kidney perfusion must be performed. If a patient has had an overdosage of narcotics, antinarcotics such as n-allyl normorphine (Nalline) are administered.

In summary, the principal intention of this paper is to show by example that the modern physician-anesthesiologist has rich and rewarding services to perform, for he does not limit his duties to administering anesthetics in the operating room. Even in assuming his primary responsibility of the management of anesthesia for the surgical patient, he extends the boundaries of patient-care, on one side, to the preanesthetic period and, on the other side, to the postanesthetic period. But, in addition, he participates as a valuable member of a medical team in providing treatment for medical and surgical patients in many divisions of the hospital. Moreover, this cooperative effort with his physician colleagues is carried into the research laboratory, where his specialized knowledge and experience is indispensable in numerous projects. Only by recognizing the potential broad scope of his practice can the anesthesiologist fulfill his desire and responsibility, as a physician, of providing the best possible medical care for his patients.

#### Congenital Diaphragm of the Descending Duodenum: Radiographic Demonstration Of Such Lesion

M. C. Hicks and E. H. Kalmon, Jr., *Radiology* 80:946 (June) 1963

A case of a partially obstructing congenital intrinsic diaphragm in the descending duodenum in a 15-month-old male is reported. An accurate preoperative diagnosis was based on the following radiographic features: (1) dilatation of the duodenal bulb and proximal descending duodenum; (2) abrupt termination of this dilatation with very smooth margins of the obstructing lesion; (3) a short area of obstruction measuring no more than 2 or 3 mm in length; (4) normal appearance and position of the duodenum distal to the diaphragm. It is emphasized that these thin diaphragms are not palpable through an intact duodenal wall. The surgeon should open the bowel and inspect the suspect area. The presence of a congenital extrinsic band should not be held to contraindicate such inspection. The operation of choice is a duodenojejunostomy or a duodenoduodenostomy.



#### Epilepsy Due to Gross Destructive Brain Lesions: Results of Surgical Therapy

T. Rasmussen, and H. Gossman, Neurology 13: 659 (Aug) 1963

Eighty-six patients with seizures due to gross destructive lesions involving more than one lobe of the brain were operated on before 1961. Eightythree have been followed for periods ranging from 1 to 24 years. Thirty-eight (45%) have become seizure-free and 23 other patients  $(28^{\circ\prime}_{10})$ have shown a marked reduction in seizure tendency. Twenty-two (27%) have had a less marked reduction in seizure tendency and are classified as having obtained unsatisfactory result. In 17 of the 86 patients the entire cerebral hemisphere was removed. One of these patients died 2 months after operation. Complete follow-up data are available for the remaining 16. Ten patients (59%) have had no attacks since leaving the hospital and 5 patients (29%) have shown a marked reduction in seizure tendency. One patient (6%) had only a slight reduction in seizure tendency.

#### Bilateral Complete Carotid and Basilar Artery Occlusion in a Patient with Minimal Deficit

D. E. Doniger, Neurology 13:673 (Aug) 1963

A patient with complete occlusion of both internal carotid arteries and the basilar artery is presented who experienced visual phenomena suggestive of episodic bilateral occipital lobe dysfunction and 2 episodes of right hemiparesis, but who recovered spontaneously and with residual deficit consisting only of mild visual field deficit. The necessity for complete arteriography in patients with cerebrovascular disease is emphasized. The place of conservative therapy in patients with occlusive cerebrovascular disease, particularly in patients who are clinically stabilized or who are improving, is suggested.

# Prescribing Supplemental Fluorine in Fluoride Deficient Water Supplies

Lawrence D. Furlong, D.D.S., M.P.H.\*

The medical and dental professions today are placing the total health of their patients as the goal in modern practice. The awareness of the medical profession to preventative disease has included the importance of the fluoride ion in the growth and development of youth of today.

This awareness is heartening, as the two professions join forces on the most prevalent disease of mankind.

Years of research have shown the benefits of fluorides in water supplies. The optimal one part per million of fluoride in the community's drinking supply has drastically reduced the caries rate as shown in surveys and data accumulated. The percentage of reduction has been between 45% to 65% in communities throughout the nation.

However, a large percentage of the population is without this beneficial research finding.

Two reasons are foremost as to its failure to reach the whole population. First, communities have been unaware of its benefits or have not moved forward to accept its preventative measures. Secondly, because of the lack of community water supplies, a great segment of the population must depend on a single private water supply. In the latter instance, the fluoridation of the supply, though feasible, is not a practical financial approach. The only avenue of benefits to the preventative activity of the fluorides is through the topical application of the fluoride by the dentist or physician in a supplemental manner.

Today, many supplemental preparations are being prepared and prescribed in lieu of the presence of the optimal content of fluorides in the drinking water or food intake. The preparations are being developed in tablet form for inclusion in drinking water, milk, and chewing gum, as well as infant feedings.

Physicians and dentists should not be hesitant to use these beneficial adjuncts under conditions where the ideal source of one part per million of the fluoride ion is absent. However, a conscientious approach can sometimes be diverted through

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an oversight.

Most water supplies contain some degree of the fluoride ion. In Arkansas, this percentage varies from 0 to 5.9 parts per million. In the areas of the state where the content of the fluoride ion is above the optimal of one part per million, the water supplies have been blended to reduce the marginal mottling of teeth which may occur in water supplies with this high water content of the ion. The Bureau of Sanitary Engineering and the Bureau of Dental Health are always alerted to these findings in water sample tests.

Today, throughout the State of Arkansas, 47 cities and communities are enjoying the benefits of fluorides in their community water supplies. These supplies serve a population of 430,000 individuals. A great step forward in the prevention of the ravages of dental disease.

A guide-line can be followed by the physicians and dentists interested in supplementing the intake of the fluoride in the drinking water supply or dietary intake. The program recommended by Trubman<sup>1</sup> is most applicable.

- I. Determine the present fluoride percentage of the water supply now being consumed. (This information in most instances can be obtained from the Bureau of Sanitary Engineering or the Bureau of Dental Health, Arkansas State Board of Health. In instances of a private water supply, a sample may be sent in for analysis to the above state agencies.)
- II. The effectiveness of supplemental fluorine is confined usually to children under the age of 12 years. For best results, fluorine administration should begin as early as possible in the life of the child.
- III. No tablets or dietary supplement should be prescribed when the amount of fluorine in water exceeds .77 parts per million.
- IV. Children two to three years old should receive 0.5 mg. of the fluoride ion daily and about 1.0 mg. daily after the age of three. This dosage applies when the drinking water is free of fluorine. V. For each 0.1 p.p.m. of fluorine in the drinking water, the prescription dosage should be reduced ten (10%) percent. Not more than 264 mg. (120 mg. fluorine) should be dispensed at one time.

VI. Parents should be advised to store fluorine preparations out of the reach of children.

VII. Parents should also be instructed not to double the dosage if a daily supplement has been missed.

The chances of over-prescribing is minimal if sensible observations are carried out. The range of 1 to 2 parts per million is not a critical area of concern in enamel fluorosis to the teeth. The author,<sup>2</sup> in observing the teeth of children for twenty-five years in natural fluoride areas within the range of 1 to 2 parts per million, was unable to find any degree of mottling or anesthetical defacing of the teeth of these youngsters.

The ideal in the progress of dental research will come to future generations when all will have the benefits of fluorides of optimal content in communal water supplies. Since this is not possible today, the medical and dental professions should use the approach at hand for those who have no choice.

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## Observations on Metabolism of Aldosterone in Man

J. A. Leutscher, C. A. Camargo, A. P. Cohn, A. J. Dowdy, and A. M. Callaghan, Ann Intern Med 59:1 (July) 1963

When aldosterone labeled with tritium is administered, the fraction transformed to each metabolite can be ascertained, and the rate of excretion may be measured. Given these data, it is possible to calculate the secretion rate of the hormone. The rate of removal of aldosterone from the circulation may also be studied by following the disappearance of labeled hormone after intravenous injection. When the metabolic clearance rate is increased in hyperthyroidism or decreased in hypothyroidism, the plasma level of free aldosterone remains within normal limits, as secretion rate is adjusted to the new balance. When removal of aldosterone from plasma is reduced by impaired hepatic blood flow or extraction, the biologically effective level of aldosterone in plasma is higher than the level resulting from the same secretion rate in a patient with normal hepatic function. When aldosterone secretion is stimulated in a patient with a reduced capacity to dispose of the circulating hormone, unusually high plasma levels result. Increased sensitivity to the sodium-retaining effect of exogenous aldosterone has been reported in similar clinical and experimental circumstances. The effects of variations of hepatic metabolism must be taken into account when the clinician or physiologist attempts to relate the circulating level of aldosterone in plasma to the secretion rate or to the quantity of a metabolite excreted in the urine.

# Granularity of the Juxtaglomerular Cells in Human Hypertension: Histologic and Clinical Correlations

H. D. Itskovitz, E. A. Hildreth, A. M. Sellers, andW. S. Blakemore, Ann Intern Med 59:8 (July)

Renal biopsies were obtained in 40 hypertensive patients for the purpose of studying the granularity of the juxtaglomerular cells as a possible indication of renin secretion. Ten patients with juxtaglomerular hypergranularity manifested severe hypertension frequently in association with a clinical picture suggesting hyperaldosteronism. Pathological lesions associated with increased granules included primarily lesions of the renal arterial tree. One patient with toxemia of pregnancy was noted also to have prominent granularity but no such increase was observed in a small group of patients with pyelonephritis, Cushing's syndrome, coarctation of the thoracic aorta, and primary aldosteronism unless nephrosclerosis was also present. Only 5 of 16 patients with renal artery lesions had juxtaglomerular hypergranularity. Hypertension persisted in seven of these patients with normal granularity despite surgery. Three of four patients with increased granules, however, improved dramatically following surgery. It is suggested that a study of juxtaglomerular cell granules in patients with renal artery lesions may be helpful in the selection of such patients for surgery.

# The Problem of the Pigmented Mole and The Malignant Melanoma

Jeff Davis, M.D. and George T. Pack, M.D.\*

In the vast majority of instances the malignant melanomas have their origin in pre-existing moles. The prevention of this cancer could be accomplished more frequently than for any other malignant neoplasm; 70 per cent of patients with melanomas admit their previous awareness of an earlier nevus.

#### Origin of Moles and Melanomas

The common origin of the malignant melanoma has been conclusively demonstrated to arise from the junctional type of nevus or a compound nevus containing junctional changes, and the tumor can be traced in continuity from the basal and adjacent layers of the epidermis. The evidence strongly suggests that these neval and melanoma cells are neuroectodermal in origin, arising in a common derivative from the peripheral nervous system (Masson).

Those melanomas which are superficially located, for the most part, in the intraespidermal area are classified as superficial melanomas; their prognosis is comparatively much better than the deeper type in which the cells demonstrate invasion of the corium. Such invasive tendencies may occur very early in the evolution of the melanoma.

The blue nevus of Jadassohn-Tiéche is composed of melanoblasts found deep in the mesodermal structure, and only in rare instances undergo malignant degeneration. Although they are bluish-black in color owing to the fact that the neval cells are located deep in the dermis, they present a clinical picture that stimulates malignant melanoma with a pathologic structure that is entirely benign.

A survey was made of 1,000 adult white males and females with respect to the frequency and regional distribution of nevi. The study of this group revealed that the average adult American had 15 moles; pigmented spots were common but true nevi were relatively infrequent on the feet and genitals.

A similar study was made and a scattergram was prepared showing the regional distribution of malignant melanomas in 1,225 patients. This demonstrated that the malignant melanoma was

\* From the Pack Medical Foundation, New York, New York.

quite frequent on the soles of the feet and on the genitals in contradistinction to the distribution of pigmented moles. The greater hazardous potential of moles becoming malignant on the feet and genitals would seem an obvious conclusion from this comparative analysis. The fact that a surprisingly greater incidence of junctional nevi are found in these anatomic locations would lend further support to the disproportionate number of melanomas found in these regions. Moles on the feet and on the genitals, if found on general physical examination, should be examined by an experienced therapist and consideration of their removal properly evaluated.

#### Race and Complexion

By far the greatest majority of malignant melanomas are found in patients who are blond, with fair skin and blue or hazel eyes, and who burn rather than tan upon exposure to small amounts of sunlight. The next most likely individuals, in whom melanoma occurs with some degree of frequency, are redheads with sandy complexion who freckle upon exposure to sunlight. Although only approximately H per cent of the American white population comprises persons with this coloration, almost 80 per cent of the patients with malignant melanoma can be classified as having this type of skin. Bearing this in mind, it is of special importance that darkly pigmented moles, especially of the junctional type, be removed as a prophylactic measure in blond and sandy complected individuals having this type of skin.

Pigmented moles and malignant melanomas are not ordinarily found in the darker races such as the American Negro or Mongolians. This, however, does not hold in the true African Negro, in whom melanomas are quite frequent, particularly on the feet.

In view of the large Negro population in New York City, it is interesting that of 1,225 patients with malignant melanomas, only 17 were Negroes. Interestingly enough, when the melanoma is encountered in the Negro, it appears to occur with greater frequency on those portions of the skin not deeply pigmented, such as the soles of the feet, the nail bed, and the oral mucosa.

#### **Indications For Removal of Pigmented Moles**

The transformation of a mole to a malignant

melanoma may occur without clinical evidence, and metastases may involve the regular lymph nodes from an adjacent pigmented skin tumor that has all the appearance of a benign growth. On the other hand, melanoma sometimes appears to develop from otherwise intact skin and would, therefore, be melanoma de novo. We cannot state with certainty that neval cells do not pre-exist, however, as they may not have been in a cluster sufficiently large, or the amount of pigmentation may not have been sufficiently great, to be obvious to our vision. Under such circumstances, it is conceivable that a nevus of microscopic size may have been present.

Where a pigmented mole that has been present for a long time without change suddenly becomes elevated or increasingly pigmented or ulcerated, or bleeds and is attended by localized discomfort or pain, it must be considered, from the clinical standpoint, a malignant melanoma in the process of formation until proved otherwise.

All nevi of a suspicious type, or those showing change, should be surgically excised with considerable margin and the specimen examined by a competent tumor pathologist.

The nevus ordinarily consists of a permanent and definitely firm stroma, while the melanoma is usually soft, disorganized, vascular, and easily distorted by the slightest pressure or irritation. This would leave in doubt the frequent incidence with which trauma of clothing or injury may be able to convert a benign nevus into a malignant melanoma. The probability always exists that the repeated trauma that the patient believed responsible for the development of the melanoma, was an injury which occurred after the melanomatous change had already occurred in the nevus.

Routine microscopic study of every pigmented mole that is excised should be performed. The excision in all instances must be conservative; but if malignant melanoma is found, then hospital admission, with radical surgical treatment, becomes imperative.

Whenever possible, all moles of a suspicious or dangerous character should be removed in infancy or childhood, before malignant transformation has a possibility of occurring. In this same connection, bathing-trunk or congenital nevi which cover a large expanse of skin should also be excised in childhood, before the prepuberal period. This may be accomplished by repeated segmental excision, removing the central portion of the

tumor as widely as possible at each session and allowing for the elasticity of the skin to permit a second or third wide central excision at a later date, until only a linear scar is left. Where feasible, skin grafting may be employed.

#### Prepuberal Melanoma

The advent of the hormonal changes of puberty may affect the appearance of existing nevi, which may become larger and more readily visible, as well as show increased pigmentation, and scattered new nevi may appear over the body at this time. This so-called prepuberal or juvenile melanoma is a pigmented nevus of great clinical importance that appears in children at puberty and occasionally extends over into young adult life. The mole bears a close resemblance to malignant melanoma and is not always clinically distinguishable from the latter. It ordinarily appears as a dark pigmented, bluish or blue-black or dark brown, smooth, well-demarcated nevus. At times it may be pinkish in color. It was originally described as containing numerous giant cells; more contemporary pathologists have described its composition as containing fascicles of spindle-shaped cells, as well as epitheloid cells, the latter being the giant cells originally described by Spitz. Its evolutionary pattern is normally that of a noninvasive benign lesion that does not metastasize. However, on rare occasions true melanoma has been found in adolescence and, histologically and clinically, such tumors follow the same course as those in adults.

As a general rule, these juvenile or prepuberal melanomas of infancy and childhood do not disseminate; they may, therefore, be treated in a conservative fashion by local excision without skin graft. The very fact that there has been a sufficient number of exceptions reported in the literature in which actual malignant melanomas have occurred in childhood should prove sufficient warning to physicians not to be too non-chalant about the management of such tumors. Avoidance of unnecessary radical surgery and the assistance of excellent pathologic consultation are of paramount importance in determining the course to be followed in such instances.

The lesson to be learned in this situation is that wisdom would consist in the complete surgical removal of all darkly, deeply pigmented nevi in children. The mistake is often made of delaying the operation for prepuberal melanotic tumors until some evident change has occurred. By this

time, the malignant transformation may already have taken place.

#### **Multiple Primary Melanomas**

The malignant melanoma is such an infrequent cancer that there is little opportunity for any one individual to have encountered more than a few instances in which multicentric melanomas occurred in the same individual. In our experience, we have observed multicentricity of origin of this tumor in less than 2 per cent of patients. In those patients in whom disparate foci have been noted, these have been observed to occur concurrently at times, while in other patients the appearance of the tumors may take place over a period of many years. The final determination as to whether to classify a pigmented tumor in the skin as a cutaneous metastasis from a previously excised melanoma or as an independent new growth unassociated with the occurrence of any previously diagnosed tumor, is entirely dependent upon pathologic examination of the tissue. Such pathologic classification depends largely upon the presence or absence of junctional change in the epidermis or epithelium overlying the tumor. In the case of a new, unassociated primary melanoma, its cellular origin can be traced in continuity to the stratum germinativum; but if the growth is a metastatic tumor secondary to a previous tumor site of another location, there is cellular disruption of the epidermis.

#### Melanoma and Pregnancy

It is well known to obstetricians that certain pigmentary changes occur in the nipples, abdomen, and face of pregnant women, but little observation has been made upon the common tendency of existing moles to become much darker during pregnancy. Pregnant women have voluntarily commented on the darkening of their moles. These changes of cutaneous pigmentation and darkening of moles in pregnancy are accompanied at times by the transformation of benign nevi into malignant melanomas. Allowing for the comparative number of months a woman is pregnant and nonpregnant during her lifetime, it would seem that she has about three times as great a chance for melanoma to develop during pregnancy as when she is not pregnant. Furthermore, twice as many pregnant women present evidence of metastasis to regional lymph nodes. However, the overall definitive curability of melanoma in pregnant women, in a recent study of a large series of cases, appeared to be the same as for nonpregnant women, allowing for the relative stages of the neoplasm.

Malignant melanoma is transmitted in a pregnant mother to her infant in utero only in rare instances. When such a transmission does occur, it would appear that the child in utero has no resistance to the growth and there is dissemination of a homologous graft of melanoma cells from the mother transmitted through the placenta.

#### Sites of Visceral Metastases From Melanoma

Post-mortem examinations on patients who died of malignant melanoma in the Memorial Cancer Center revealed the fact that malignant melanoma often metastasizes by the blood vascular route, with widespread visceral dissemination. These studies also revealed that malignant melanomas possess the ability to grow in almost any tissue in which they might lodge. Melanoma would appear to lack the differential selectivity for metastatic deposits that is ordinarily associated with other types of cancer.

In this series of cases from the Memorial Cancer Center, metastases to bone occurred in 49 per cent of the patients, to the heart in 44 per cent, and to the brain in 38 per cent. It would appear that melanoma metastasizes to the brain more commonly than any other tumor, the frequency exceeding even that of cancer of the breast and bronchogenic carcinoma.

## Principles of Surgical Treatment of Malignant Melanoma

Excisional biopsy is employed for the removal of suspected pigmented tumors where verification of microscopic examination is necessary for the determination of the final diagnosis. A liberal but not extravagant margin of skin is removed and primary wound closure accomplished.

Where the diagnosis of malignant melanoma has been made in the case of a tumor situated at a distance from the regional lymph nodes, a very wide sacrifice of surrounding skin, subcutaneous fat, and fascia should be done. Here one is not concerned primarily with the ease of skin approximation. The incision must go deep enough to constitute a three-dimensional dissection. It should not only extend beyond the limits of the tumor on the surface, but it must also be such as to remove the fascia overlying the muscle in order to extirpate the adjoining lymphatics in the neighborhood of the melanoma. Removal is great enough to necessitate the immediate application of a skin graft in most instances. If the mela-

noma is on a digit, amputation proximal to the metacarpo- or metatarsophalangeal joint is performed.

Where the melanoma is situated closely adjacent to the regional lymph nodes, the operation of excision and dissection in continuity, or monobloc dissection, is planned. The extent of the excision is such that primary wound closure can usually be effected. In this operation, the removal of an elliptical segment of skin includes the primary melanoma, the intervening skin between the site of the melanoma and the axilla or groin or neck. and dissection of the lymph node-bearing region together with a wide excision of the underlying fat and fascia down to and exposing the muscles over the region. The operation is always completed by a thorough dissection of the regional lymph nodes that may be implicated. By this means, melanomas which seem to disseminate by way of the regional lymphatics are often amenable to radical surgical treatment. Those melanomas which spread through the venous channels ultimately develop visceral metastases and hence are incurable from the time this occurs. By means of the monobloc excision and dissection in continuity, not only are the primary tumor and the first relay of metastases in regional lymph nodes removed, but the intervening lymphatics as well. Theoretically, this measure should restrain the great tendency for metastases to develop in the tissue between the primary site and the regional lymph nodes. The adoption of this principle in the treatment of malignant melanomas has perceptibly improved the end results.

Where the primary malignant melanoma occurs in the skin at a remote site from the region of lymph node metastases — for example, a melanoma on the sole of the foot with metastases to the femoral and inguinal lymph nodes, or a melanoma in the nail matrix of a finger with metastases in the axillary lymph nodes — it is impossible to remove both the primary and metastatic foci with dissection of all the intervening lymphatics between the two sites. In our opinion, it is hazardous in such a situation to permit any of the intervening lymphatics to remain, because with the dissemination of malignant melanoma by way of the lymphatic vessels, with their sluggish circulation, the accidental lodgment of melanoma cells anywhere en route inevitably leads to local recurrence in the arm or leg. We have witnessed this phenomenon of satellitosis in arm or leg in too many tragic instances.

Although a few of our cases, in which the discontinuous operation of amputation of a digit and independent axillary or groin dissection was done, have resulted in five-year definitive cures, the number of these patients is so few in comparison with the large group of failures that one is reluctant to advise conservative measures except in aged subjects. Except under most unusual circumstances, it is probably safer for the patient with a melanoma of the hand or foot, with metastases to the axilla or groin, respectively, to submit to an amputation of the entire extremity plus dissection of the regional lymph nodes.

If a patient has a melanoma on a hand or foot which may fall in the operable category, at present we are content to remove surgically the primary melanoma and leave the axillary or groin nodes, respectively, untouched. There is a good chance that metastases may not appear in these nodes, and we think it advisable to permit them to remain in situ to filter out and contain melanoma cells if such be in transit. We are not committed to the execution of an axillary or groin dissection as an elective procedure. There have been occasional instances, when metastases have occurred later in the axilla or groin, when we have dissected these regions and at the same time perfused the vulnerable extremity, utilizing phenylalanine mustard as the cancerostatic agent.

Improvement in the collective end results of the present series of cases as compared with those of earlier years may be accounted for on the basis of (1) the abandonment of radiation therapy as a primary therapeutic discipline; (2) the education, by the American Cancer Society, of the lay public and the medical profession concerning the hazards of certain pigmented skin lesions, resulting in earlier diagnosis; (3) the institution of surgical treatment at a time when the primary melanoma often remains localized; and (4) more adequate surgical procedures for melanomas, both local and metastatic to lymph nodes, based on the principles previously stated.

Of all patients coming with proved melanomas—namely, total experience, including inoperable primary melanomas and inoperable recurrent melanomas—the present five-year definitive cure rate is 38 per cent.

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# Factors Affecting the Absorption of Nystatin by Candida Albicans

A. Ghosh and J. J. Ghosh, Ann Biochem Exp Med 23:101 (March) 1963

Studies of the absorption of nystatin, an antifungal polyene antibiotic, were made on pathogenic Candida albicans organisms in both the yeast and mould form. Experiments at different pH levels and different degrees of nystatin concentration indicated that the maximum absorption occurs near pH 3-0, and that 4 to 5 times more nystatin is necessary to be present in the mould medium than in the yeast form, to reach the same degree of absorption. The kinetic data showed that absorption of nystatin is a very rapid process, saturation taking place after approximately 30 min in a yeast-cell medium and after nearly 2 hours in the case of mould cells. This difference may be due to the fact that the younger cells in the growing phase are much more efficient in removing the antibiotic, or are metabolically more active in absorbing it. However, below saturation point, not all the nystatin present in the incubation mixture was absorbed. A marked inhibition of absorption of nystatin by both the resting and the growing cells was caused by oleic and linoleic acids. It seems that these long-chain unsaturated fatty acids may compete with antibiotics of the nature of nystatin for a common receptor site on the cell. In addition to this competition, the presence of digitonin also inhibited the absorption of nystatin, partly by reducing its effective concentration and partly by releasing into the medium the nystatin which had already been absorbed.

# Vasopressor Agents in Cerebral Vascular Insufficiency

J. F. Fazekas and R. W. Alman, Amer J Med Sci 246:147 (Aug) 1963

The quantitative cerebral effects of intravenous mephentermine were investigated in normal subjects and in patients with cerebral vascular disease. Doses inducing moderate blood-pressure elevation caused no change in cerebral oxygen consumption and, at most, only equivocal reduction in cerebral blood flow. No untoward results were observed in subjects with cerebral vascular insufficiency, perhaps because involved vessels may not have undergone the normal constrictor response to blood pressure elevation (or to the drug); local flow through such vessels may even have been improved. The desirability of blood pressure stabilization in cerebral vascular disease would appear to constitute a specific indication for mephentermine administration. This agent may be preferable to most sympathomimetic amines because of oral effectiveness and other advantages.

# Rule 21 of Workmen's Compensation Commission Modified Effective September 1, 1963

The Council of the Arkausas Medical Society received complaints during 1962 that Rule 21 of the Workmen's Compensation Commission interfered with a patient's right to select his physician when being treated for compensable injuries. The Council appointed a special committee headed by Dr. Alan Cazort of Little Rock to try to amend Rule 21 to insure free choice of physician. The following is a modification of Rule 21 effective September 1, 1963, which appears to answer the complaints heard by the Council

#### Rule 21

The employer and/or insurance carrier has the right and duty in the first instance to provide prompt medical care to injured employees through physicians and hospitals of the respondents' choice. A claimant, subsequently, may obtain a change in treating physicians to a physician of the claimant's choice, the costs of such treatment to be borne by the employer or the employer's insurance carrier, provided (1) the claimant's healing period shall not have ended; (2) the claimant is not seeking to change physicians from one of his own choice, previously selected by the claimant; (3) the physician to whom claimant wishes to change is qualified in the particular field of medicine needed for claimant's particular difficulties; (4) the claimant files with the Commission a petition for a change in physicians, gives the name of the physician to whom he wishes to change and asserts that the physician to whom

he wishes to change is competent to treat his particular ailment; (5) no unresolved issue exists over whether claimant is legally entitled to medical care at the expense of respondents.

Respondents shall be promptly notified by the Commission of such change in physician.

In the event an injured workman enters a Veterans Administration Hospital for treatment of an on-the-job injury, the Veterans Administration Hospital, as soon as it ascertains from the injured workman that he is suffering from an alleged compensable injury, shall promptly notify the employer and/or insurance carrier, as well as the Arkansas Workmen's Compensation Commission that the injured workman is under its care. Upon receipt of such notice, the employer and/or insurance carrier shall immediately offer in writing to provide such workman care in a private hospital under the care of a private physician qualified to treat the particular difficulty, such treating physician to be chosen by respondents (but the right of the employee to change to a private physician of his choice, under the circumstances outlined above, shall not be abrogated). Copy of such offer shall be furnished to the Veterans Administration Hospital. In the event such offer is declined by the workman, then the employer and/or insurance carrier shall not be liable for the expense of the treatment rendered by said Veterans Administration Hospital.



# "Directional" Flow Patterns in Portal Hypertension

F. C. Jackson, Arch Surg 87:307 (Aug) 1963

In a study of "directional flow," ie, the early appearance of radiopaque dye in branches of the splenic vein, 260 splenoportograms were performed on 223 patients with benign or malignant disease of the liver and pancreas. Spleen pressures and portograms were studied in 175 of the patients, and the normal spleen pressure was found to be 13.0 mm Hg. The selective appearance of

the dye in one or more branches apparently influenced bleeding from varices when the spleen pressure was 25 mm Hg or higher (p<0.01) and when the coronary vein was seen (p<0.05). It is suggested that if prophylactic portocaval shunt is of value in preventing hemorrhage from varices it would be in patients with coronary vein demonstrated on portography. A technique to reduce complications from percutaneous splenoportography is also described.



# WHAT'S NEW IN UROLOGY

Wm. W. Christeson, M.D.\*

Perhaps the newest proven procedures in Urology have to do with the diversion of urine, most often, away from the bladder. Of course there are many procedures more or less in the experimental stage, such as the transplantation of kidneys from one person to another, and studies of the function of the urinary tract by Cinefluorography, so well described by Dr. Joe Scruggs (1) in an earlier issue of this journal. But the newest methods of urinary diversion are well established and are bringing much needed relief to many patients.

Some nine years ago Dr. Eugene Bricker (2) of St. Louis, popularized the Heal Bladder Substitution in an effort to better handle the urine radical pelvic sweep for carcinoma of the cervix, uterus, or bowel. Since that time this operation has brought much relief to many patients with neurogenic bladder, cancer of the bladder, chronic interstitial cystitis, intractable urethral stricture, unrepairable vaginal fistula, and extrophy of the bladder.

This procedure is done by isolating a four to six inch segment of terminal ileum, with its mesentery from the bowel and closing the proximal end. The bowel from which this was isolated is then reanastamosed. The ureters are then divided low in the pelvis, brought to the segment retroperitoneally and anastamosed to the segment of ileum, mucosa to mucosa. The distal end of the ileum segment is then brought through an opening in the abdominal wall and sutured to skin. The urine then passes continuously from the ileal segment into a special bag which is

\*Donaghey Building, Little Rock, Arkansas.

cemented to the skin in a water tight method. It might be well to mention here that segment of ileum isolated in a similar manner may be used to bridge the gap from ureter to bladder when such exists.

More recently, popularization of a method of forming a permanent fistula between the abdominal skin and bladder has occurred (3). This has been very helpful when long term bladder drainage is necessary as in bladder neck obstruction with associated hydronephrosis which must be reduced before the bladder neck can be corrected. This procedure has been termed "Permanent Suprapubic Vesicostomy" and does away with indwelling catheters, which, as foreign bodies, always invite infection.

A flap of bladder is raised and anastamosed to the skin from which a similar flap has been turned down for anastamosis to the bladder. Thereby a tube of bladder and skin is formed which reduces stricture formation or closure of the fistula. The urine flows constantly into a collecting apparatus cemented to the skin.

Suprapubic Vesicostomy is taking the place of Ileal Bladder Substitution in such conditions as intractable urethral stricture and neurogenic bladder of the flaccid type. It is not applicable to those of the spastic type since the spasm obstructs the ureterovesical junction causing hydroureter and hydronephrosis. This is a much simpler operative procedure than Ileal Bladder Substitution and does not require entry into the peritoneal cavity or bowel anastamosis. Both procedures are reversible in that the ureters may be reanastamosed to bladder or the suprapubic

fistula surgically closed should the condition of the bladder improve to that point. Both procedures are a great improvement over the old ureterosigmoid anastamosis since contact with the fecal stream is eliminated, thereby reducing ascending infection.

There may be some doubts as to the efficiency of the collecting bags. With the newer skin cements there is no leakage and no odor if the bags are kept clean. Most patients empty their bags three to five times a day and change bags on an average of every three days. They may go about their daily work with no one knowing the difference, as well as participating in sports—even swimming. Once a good fit has been accomplished I have never seen any of these patients who are ungrateful.

A procedure for permanent repair of stricture of the bulbous urethra has recently been described by Dr. C. A. Moore (4) of Denver, Colorado. Dr. Moore lyses the stricture through a perineal urethrotomy then lets it epithelize and granulate

in over an indwelling catheter for a period of two weeks.

For strictures of the anteria urethra one of our Scandinavian colleagues, Dr. B. Johanson (5) has described a two stage procedure whereby the fistula is unroofed and the urethra marsupalized to the skin at first sitting. Then the resulting fistula is treated as one would a hypospadius at the second sitting.

There are many more new developments in all phases of urology; however, I felt these new, proven surgical procedures might be applicable to some of the reader's patients.

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#### A Follow-Up Study of Surgery in Temporal Lobe Epilepsy

M. A. Falconer and E. A. Serafetinides, J Neurol Neurosurg Psychiat 26:154 (April) 1963

One hundred consecutive temporal lobe epileptics submitted to an anterior temporal lobectomy have been followed-up for periods ranging from 2 to 10 years. Of these, 53 patients were free of seizures or almost so, 30 showed at least a 50% improvement, and 17 displayed little or no improvement. After the first postoperative year a few patients appeared to migrate from one group to another, but from the second year, the ratio of therapeutic results seemed constant. All but one patient before operation showed electroencephalographic (EEG) evidence of an 'epileptic focus' confined to or predominant in one temporal lobe, and after operation the EEG record usually became normal simultaneously with improvement in epilepsy. Lesions were found in the resected temporal lobe in the great majority of patients. Forty-seven were found to have mesial temporal lobe sclerosis, 24 to have small malformations, and miscellaneous or equivocal lesions were found in the remainder. The results were better in the first two groups. It is concluded that although the surgery of temporal lobe epilepsy has proved rewarding, there are still many problems confronting it which only time, careful investigation, and the utilization of data obtained from planned experiments can resolve.

# Significance of Post-Traumatic and Postoperative Oliguria

R. W. Hopkins et al Arch Surg 87:320 (Aug) 1963
Urinary findings in four oliguric patients in shock were compared with findings in six patients who were oliguric during surgery. An effect of antidiuresis in the surgical patients was indicated by a high osmolarity, low sodium, and acid pH. In the patients in shock, urinary osmolarity close to that of the plasma, low sodium, and acid pH indicated poor renal perfusion with continued tubular function.

#### TEACHING SEMINAR

University of Arkansas Medical Center Little Rock, Arkansas



# Recent Advances in the Biochemical, Pharmacological And Clinical Aspects of Pheochromocytoma

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Pheochromocytoma is an intriguing but infrequent neoplasm whose bizarre signs and symptoms are often better remembered by medical students and physicians than many of the more commonly occurring tumors. Yet, the importance of an understanding of the clinical, pharmacological, and pathological aspects of this tumor and its secretory products lies in the curability of this distressing and potentially lethal neoplasm. Within the past few years a number of authors have added a significant new information to the clinical and biochemical knowledge of this tumor.

#### **General Information**

Pheochromocytoma remains an uncommon entity whose exact incidence is unknown because of unreported isolated cases. These tumors have been found in patients of every decade of life. One review of over 200 cases indicated that approximately 75 percent of the patients were between 20 and 49 years of age, and more than 10 per cent of the patients were under 20 years of age.9

Pheochromocytomas occur in adrenal cell rests in the renal areas, the organs of Zuckerkandl at the origin of the inferior mesenteric artery, the prevertebral and peripheral sympathetic ganglia, as well as within the adrenal glands. Approximately 20% are found outside of the adrenal glands, and approximately 10% are bilateral or in multiple sites.

Malignancy of these tumors as judged by local

extension and metastases is low with only 21 such cases reported by 1959.<sup>3</sup>

The report by Mason *et al* in 1957 of increased urinary excretion of vasopressor amines in an infant with neuroblastoma has been amply confirmed in a number of children with such tumors.<sup>20</sup> Neuroblastomas and pheochromocytomas represent different neoplasms of a particular component of the autonomic system, namely the sympathetic ganglion cell. Neuroblastomas are usually regarded as undifferentiated embryonic cells and pheochromocytomas as the more differentiated cells. It might be suspected that differences in catecholamine metabolism would occur in the two tumors. Hypertension has been found in a few patients with neuroblastoma, but this has not been of a uniform occurrence.

#### **Clinical Aspects and Diagnosis**

The diagnosis of pheochromocytoma may be delayed because the symptoms particularly early in the course of the disease often mimic a variety of conditions. Anxiety and complaints suggestive of psychoneuroses sometimes occur as predominate symptoms. Other complaints include headache, weakness, abdominal pain, dyspnea, tachycardia, parathesias, and a sense of constriction of the chest. Sweating and elevation of temperature due in increased metabolism and cutaneous vasoconstriction are noted in some patients. The signs and symptoms usually occur in paroxysms which in some cases are once in several months

to as frequently as 10 to 25 times per day. These paroxysms may occur unexpectedly or follow changes in position, deep breathing, pressure over the tumor, or simply emotion. Hypertension becomes sustained in a few patients.

Often the diagnosis is established on the basis of history of typical attacks, palpable abdominal mass, or an elevated blood pressure induced by pressure over the tumor or change in body position. By the use of intravenous histamine phosphate the tumor can be stimulated to secrete epinephrine and norepinephrine as noted the blood pressure rise. If the blood pressure is abnormally elevated, a marked fall in blood pressure often occurs in patients with pheochromocytomas following the administration of Regitine, a drug which blocks the vasopressor actions of the catecholamines. Visualization of the tumor by retroperitoneal carbon dioxide insufflation or demonstration of renal displacement as revealed by intravenous pyelograms is sometimes helpful. Quantitative determination of urinary catecholamines can be an important diagnostic aid.

One aspect that may be overlooked in the single case of pheochromocytoma is the possible hereditary nature of the tumor. Among a total of 542 reported pheochromocytomas there were 32 cases in 12 unrelated family lines.<sup>6,19</sup> As many as 3 successive generations in 1 lineage have been proven pheochromocytomas. Among these 12 particular families are a number of parents who have had pheochromocytomas. Nineteen of their children are known, of whom 10 or 52% have already had pheochromocytomas. The association of these tumors with neurofibromatosis is well established with 20 cases of simultaneous diseases reported in a 1958 literature survey by Healey et al.10 Several recent reports have pointed out the apparent association of thyroid carcinoma with pheochromocytoma in certain families as well as the simultaneous occurrence of both malignancies in a number of instances.6,14,17 further interest is the occurrence of bilateral pheochromocytomas in these latter patients. A case of pheochromocytoma associated with thyroid carcinoma, parathyroid adenoma and hyperparathyroidism has been reported.<sup>17</sup> Thus, in an isolated case of pheochromocytoma detailed family histories and examination of as many of the family members as possible for both thyroid and adrenal malignancies prove quite rewarding. Patients with thyroid carcinoma may occasionally lead to families with multiple endocrine tumors.

#### **Biochemical and Pharmacological Aspects**

There is general agreement that most of the symptoms of patients with pheochromocytoma are induced by the release of abnormally high quantities of epinephrine and norepinephrine from the tumors. In the past few years considerable study has been directed toward an understanding of catecholamine metabolism both in normal human subjects as well as in patients with pheochromocytomas and neuroblastomas. Until recently, one could account for only 1 to 4 per cent of parentally introduced epinephrine or norepinephrine in the human subject. The enzyme monoamine oxidase with its deaminization activity was thought to be a major component in the deactivation of the catecholamines, but quantitative recovery of the deaminated products was unsuccessful.

By utilizing radioactive epinephrine and norepinephrine, the major routes of inactivation and catabolism have been elucidated.<sup>2,12,13</sup> It is now apparent that both rapid tissue binding as well as methylation operate in the deactivation of these catechols. Epinephrine and norepinephrine bound to tissues are released slowly, and the greater portion is likewise methylated. The methylating enzyme, catechol-0-methyl transferase has been found in all tissues. The enzyme monoamine oxidase has a minor role in the deactivation process and apparently is operational in the deaminization of the inactive methylated products. This scheme is supported by the finding that iproniazid (Marsilid), a potent monamine oxidase inhibitor, fails to prolong the action of endogenous or exogenous epinephrine of norepinephrine. This deactivating and catabolic process is depicted in Figure 1. Minor pathways both in synthesis and catabolism exist but are not considered here. Approximately 85 per cent of the radioactive epinephrine or norepinephrine administered to human subjects can be recovered from urine as methylated compounds, namely metanephrine, normetanephrine, and vanilmandelic acid.

With this new understanding patients with pheochromocytoma as well as patients with neuroblastoma have been studied to determine their patterns of urinary catecholamine excretion products. It has been shown that the methylated inactive compounds occur as the major catechol metabolites in both neoplastic entities, but the

greatest abuormalities (expressed as multiples of upper limits of normally excreted quantities) show considerable individual variation. Among 23 patients with pheochromocytoma studied by Crout et al,<sup>5</sup> 15 patients had the greatest abnormality in urinary epinephrine and norepinephrine, the next greatest abnormality in metanephrine and normetanephrine, and least for vanilmandelic acid (VMA). The remaining 8 patients had the highest abnormality in urinary metanephrine and normetanephrine with either VMA or epinephrine and norepinephrine showing the next highest deviation. These authors prefer the determination of normetanephrine or metanephrine as a screening procedure for pheochromocytoma both because of high reliability and ease of technical performance.

From a study of 20 cases of neuroblastoma, Studnitz et al<sup>20</sup> found the earlier precursors, dehydroxyphenylalamine (DOPA) and dehydroxyphenylethylamine (DOPamine) of norepinephrine and epinephrine to occur in abnormally high quantities in urine in contrast to the usual minimal excretion of these compounds in cases of pheochromocytoma. All 20 patients had notably abnormal quantities of catecholamine metabolites in their urine. These authors concluded that the determination of either metanephrine and normetanephrine or VMA in cases of neuroblastoma would be preferred because of the frequency and magnitude of the abnormal quantities excreted as well as the ease of measurement.

#### Pitfalls in Catecholamine Determinations

From a number of investigators have come admonitions against introducing or failing to consider factors that may produce false positive laboratory values for catecholamines in suspected cases of these tumors. The urine samples must be taken from 24 hour volumes to avoid errors due to periodic variations in the quantities of catechol excretion, and completeness of collection must be assured. The urine samples often must be sent to distant laboratories where facilities are available for catecholamine determinations. Epinephrine and norepinephrine are unstable unless precautions are taken to maintain a low pH in the urine sample. These compounds are determined by measuring their fluorescence after certain chemical reactions, and unfortunately a number of drugs show fluorescence in approximately the same wave length. Notable among these latter compounds are the tetracycline antibiotics, glyceryl guaiacolate (Robitussin) erythromycin and alpha-methy-dopa (Aldomet).8 There is an appreciable possibility that other drugs may show a similar interference especially if their chemical structures are composed in part of benzene rings. It is noteworthy that alpha-methyldopa prevents the decarboxylation of Dopa to Dopamine thus preventing the formation of catechols with appreciable vasomotor activity. Yet, in a patient with essential hypertension treated with this drug, a quantitative determination of urinary epinephrine and norepinephrine would likely be reported erroneously as being markedly elevated. This drug should be of value in controlling the abnormal synthesis of catechols in patients with inoperable pheochromocytoma and occasionally in patients with neuroblastoma.

Another possibility in introducing misleading laboratory findings is the utilization of Reserpine in a hypertensive patient. Reserpine has been found to release and deplete the body stores of epinephrine, norepinephrine and sertonin. These compounds are released into the blood stream and excreted into the urine. Thus, theoretically at a certain critical period, markedly elevated quantities of these compounds and their metabolites would occur in the urine. Guanethidine (Ismelin) evidently can cause a partial release also of epinephrine and norepinephrine.

Undue excitement or anxiety should be avoided, and this may pose a problem especially in a hospitalized patient. Marked elevations in urinary epinephrine and norepinephrine have been noted in people with excitement or stress such as professional ball players and psychoneurotic patients.<sup>7</sup>

Strangely enough, bananas have been found to contain large quantities of biologically active norepinephrine and some of its precursors. Serontonin has been found also in appreciable quantities in bananas.<sup>21</sup> This dietary factor has led to abnormally elevated catecholamine metabolites particularly among hospitalized pediatric patients.

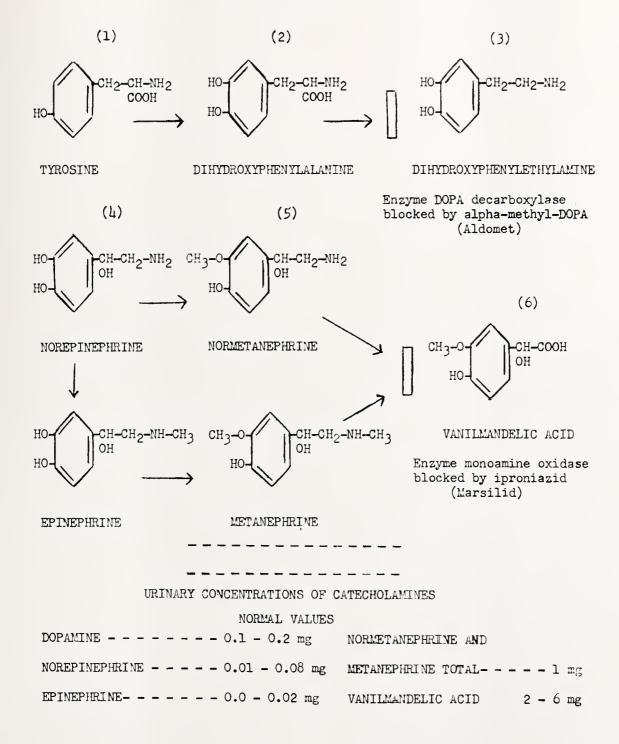
#### **Summary and Comments**

In summary, recent studies have provided valuable diagnostic aids as well as increased understanding of the clinical features of pheochromocytomas and neuroblastomas. Some of the factors causing false positive laboratory tests have been stressed.

It is well to remember that the determinations

# TABLE I MAJOR PATHWAY OF SYNTHESIS AND CATABOLISM

#### OF CATECHOLAMINES



of catecholamines and their metabolites are usually expensive, often not locally available, and rarely are diagnostically positive. Certainly less than 0.1 per cent of patients with hypertension have pheochromocytomas. Careful screening of hypertensive patients by diligent pursual of history, physical examination, repeated blood pressure recordings, the more simple and cheap laboratory tests, and perceptive judgment remain prerequisites for the diagnosis of this uncommon entity.

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#### **Acute Aseptic Meningitis Syndrome**

F. N. Quintos and O. Villavicencio, J Philipp Med Ass 39:60 (Jan) 1963

The clinical features of the acute aseptic meningitis syndrome are presented and an effort is made to differentiate it from the vast range of clinical disease entities that can similate it. The authors suggest that the term, acute aseptic meningitis, be applied only to disease conditions which cannot be definitely classified among the known viral diseases, such as poliomyelitis, mumps, epidemic encephalitis, and leptospirosis. The viral origin of the illness is emphasized and a report is given of ten cases, seven boys and three girls varying in age from 4 months to 10 years. All ten children had fever which was usually high, remittent or intermittent. Five of the cases,

aged three or above, experienced headache, nausea, vomiting, and had a slight rigidity of the neck and back. The chin-chest sign, a test for rigidity in which a child in a sitting position is asked to bend his neck so that his chin will touch his chest, proved positive in all five children above 3 years of age. The white blood cell count was often elevated, varying from 11,000 to 23,800 with predominance of the granulocytes and the spinal fluid was slightly under pressure in the majority of the cases. The total duration of the illness varied from 4 to 10 days. All of the children recovered rapidly and follow-up showed that they remained well and did not develop any sequelae. Since the course of the disease is benign and there is no known specific treatment, the therapy is symptomatic.



#### ELECTROCARDIOGRAM

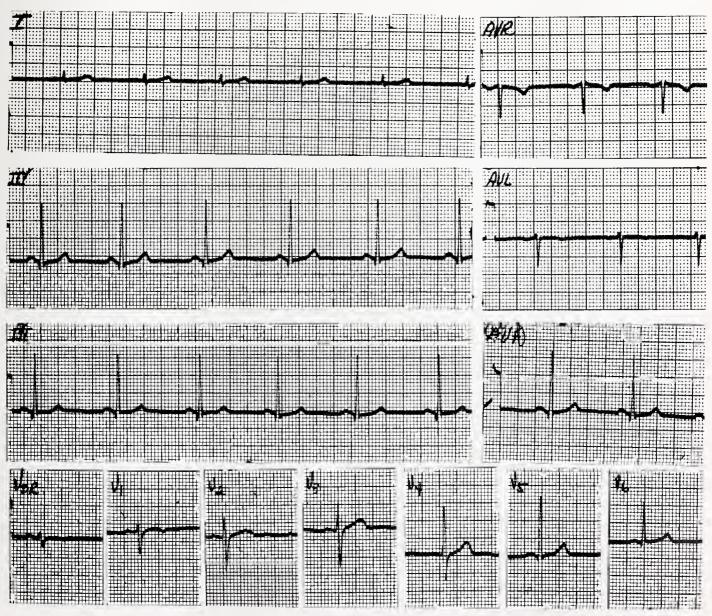
#### WHAT IS YOUR INTERPRETATION?

AGE: 44 SEX: F BUILD: SLENDER BLOOD PRESSURE: 120/70

MEDICATION: None

HISTORY: Syncope on bending over.

#### Answer on Page 236



The Department of Medicine, University of Arkansas Medical Center
\*James S. Taylor, M.D., Professor of Medicine

#### WHAT IS YOUR DIAGNOSIS?

Prepared by the Department of Radiology, University of Arkansas School of Medicine, Little Rock

Answer on Page 236



Case No. 12

No. 13-84-21

History:

For two months the patient had noted upper abdominal pain, anorexia, weight loss and vomiting. Two weeks before this film was made she became jaundiced.

65 year old colored female



#### PUBLIC HEALTH AT A GLANCE

### Pseudo Medicine

At the time the Food and Drug Division of the Arkansas State Health Department was created in 1945 conditions relative to the practice of medicine and the welfare of the ambulatory patient in rural areas were equally abused.

The attitude of "Let the buyer beware" has been an often repeated slogan from the medieval market places down through the years but has by no means been restricted to articles of trade.

Within the decade scores of medicine men frequented the street corners of our cities and towns, erected tents in which to conduct shows and exhibitions, set up displays at livestock auction centers and hawked from the back of trucks, to attract the prospective customers to buy their wares. Many of these persons were dressed as Indian Chiefs and represented themselves as being the direct descendants of the tribe. They usually claimed to be the only person having the secret formula that had restored many to youthful health as was used by the medicine men of the past. Their formula normally consisted of Magnesium Sulfate mixed with sena leaves and other herbs to be brewed for dispensing. This gave a cathartic effect thus cleansing the liver, kidneys and intestinal tract as well as providing a cure for many ailments including gallstones, gout, heartburn, dispepsia, headache, backache, arthritis and diabetes.

The salves and ointments consisting of petroleum jelly and salicylic acid were sold for the treatment of all skin irritations including athletic foot, ring worm, skin cancers and was prescribed for polio.

These remedies probably caused few ill effects other than to delay adequate medical treatment to those who should have been under the treatment of a physician. Our records reveal that skin cancers thus treated were aggravated and caused to spread due to added irritation by these preparations. We have observed the sale of such rem-

edies to diabetic persons who were told that if their concoctions were used the need of shots would be unnecessary. We have stood in line with these persons and purchased drugs from the same containers as treatments for arthritis, Bright's disease and skin cancers.

Many persons were practicing medicine in Arkansas without a license. Most of them were specializing in cancer and arthritis and some were doing minor surgery and obstetrics.

In 1953 the Arkansas Food, Drug and Cosmetic Act was passed by the State Legislature which included a section pertaining to adulterated and misbranded drugs. The advertisement of a drug is declared to be false if it is false or misleading in any particular. Sec. 18(b) states in part that the advertisement of a drug or device representing it to have any effect in albuminuria, appendicitis, arteriosclerous, blood poison, bone disease, Bright's disease, cancer, carbuncles, cholecystitis, diabetes, diphtheria, dropsy, erysipelas, gallstones, heart and vascular diseases, high blood pressure, mastoiditis, measles, meningitis, mumps, nephritis, otitis media, paralysis, pneumonia, poliomyelitis, prostate gland disorders, pyelitis, scarlet fever, sexual impotence, sinus infection, smallpox, tuberculosis, tumors, typhoid, uremia, venereal disease, shall also be deemed to be false. With this and other portions of the Drug Section of the Act many legal actions have been instigated against the medicine men of our time who had advanced but little from the Tom-Tom Medicine Men of the past.

In 1957 the Arkansas Medical Practice Act was greatly revised and for the first time a program was put into action under the direction of the State Medical Board and its able attorney, Mr. Eugene Warren, to draw the practice of medicine into legal channels. Many quack doctors were enjoined by the courts from the practice of medicine and many others moved from the state or

discontinued their medical practice voluntarily, thus removing the wedge of Pseudo Physician from between the patient and the legitimate medical practitioner.

During the many co-operative investigations made by personnel of the Food and Drug Division of the State Board of Health relative to Medical Quackery it was found that the 1951 Arkansas Barbiturate and Benzedrine Law and the 1937 Uniform Narcotics Drug Act were being abused. In some instances addiction was being supported by the physician. A few Physicians were addicts. The addict was obtaining narcotic drugs through fraud in many instances by being under the treatment of more than one physician at one time and filling the prescriptions in different drug stores. Pharmacies were being called by the addict representing himself to be a physician, or nurse of a physician, requesting class B narcotics to be picked up by the patient. Sometimes class A narcotics were requested by phone and have been obtained even though both Federal and State Laws require a signed prescription before they are delivered. Within recent months addicts have approached physicians complaining of kidney stones requesting narcotics after submitting urine samples containing blood. It was found in one case that a finger had been pricked and the blood added to the specimen jar at the time the sample was submitted. The sample obtained in a jail under supervision did not contain blood.

In recent years the amphetamine drugs have

become in demand by truck drivers who make long distance hauls of two or three days without sleep. After he reaches his destination he reverts to barbiturates to relax him in order to sleep. This practice has extended to college campus where students have become habituated to amphetamine use proposing to stay awake for two nights straight craming for exams. After the exams they feel they are in a stupor unless they are under the influence of the stimulant, and insist on taking them regularly.

In the past, these potentially hazardous drugs have been relatively easy to obtain. The Federal and State Laws are becoming more strict requiring an account for such drugs from the manufacturer to the patient in that more and more traffic accidents are contributed to drug use and that more and more people are becoming dependent upon them.

We appreciate the splendid co-operation of the State Medical Board and the State Board of Pharmacy in recognizing the many problems associated with the illicit drug traffic in Arkansas. We sincerely urge every physician to become informed of the State Laws, relative to drugs, in order that the drugs may be used as they were intended. Doing so may prevent a drug addict which may be of your own household.

> Creo A. Jones, Director Division Food and Drug Control State Board of Health



# Onset and Cessation of Fits Following Craniocerebral Trauma

W. F. Caveness, J Neurosurg 20:570 (July) 1963

The cases of 356 young adult males who received missile (197) and non-missile (159) head injuries during the Korean Campaign were followed for 8 to 11 years. Fits which could be classified as either focal, focal and general, or general in pattern occurred in 109 men, half of whom had their first attack within 6 months, and 80% within 2 years of injury. Although at the onset fits occurred equally in those who had received missile and non-missile head injuries, it became apparent after the first month following onset

that fits occurred more frequently in those who had received missile head injuries. Those with injuries in the parietal region are more susceptible to attacks than those with injuries in other areas, and the greater the brain damage the greater is the occurrence of fits. Attacks have ceased (abatement for at least 2 years) in 58 men. There is no correlation between the cessation and the mode, site, or severity of the injury, time or onset or the attack pattern. The attack frequency, however, is significantly higher in those with persistent fits. In the tenth year of this study, while the overall incidence of attacks is 30.6%, the number of those in whom fits persist is 14.3% of the men injured.



# Pickwickian Syndrome

Alfred Kahn, Jr., M.D.

n 1956, Burwell, Robin, Whaley and Bickelmann (American Journal of Medicine, Volume 21, page 811, 1965) discussed the association of extreme obesity associated with alveolar hypoventilation. They characterized this as a Pickwickian syndrome as portrayed by the fat boy in "The Pickwick Papers." Included in their report is a reproduction of Thomas Nast's caricature of the fat boy. Clinically the authors describe the features of the Pickwickian syndrome as follows: marked obesity, somnolence, twitching, cyanosis, periodic respiration, secondary polycythemia, right ventricular hypertrophy, and right ventricular failure; the description of the syndrome is not considered to be original with these authors but their characterization under this eponym is a first. Burwell et al demonstrated that as their patient lost weight all of the evidences of the Pickwickian syndrome disappeared. Their case had all the attributes of car pulmonale and these disappeared with weight loss; they characterize this as "curable heart and lung disease."

In the recent past Alexander, Amad, and Cole have reviewed the cardiorespiratory effects of obesity. They state that one man out of every five, 20 years of age or older, is overweight at least 10%; these men have a 20% greater mortality than so-called standard insurance risks. Alexander et al studied 100 very obese patients. Among the clinical features noted was exertional dyspnoea in 84%; orthopnoea was present in only 8%; joint pain was present in 72%; somnolence in 52%; edema in 64%; hypertension in 48%, etc. Of interest is that the somnolence bore no relationship to age, amount of excess weight or level of O<sub>2</sub> saturation; there seemed to be at most remote relationship to CO<sub>2</sub> retention. The

hypertension seen in this series was proved by intraarterial puncture. These patients tended to have enlarged hearts and it is presumed the result of the weight plus hypertension in some cases. Edema did not relate to the amount of excess weight and often was unassociated with elevated central venous pressure; the cause of the edema is speculative. Dyspnoea, too, could not clearly be related to the degree of weight gain; obese patients do have a reduced maximum voluntary ventilation; CO2 retention was present in only 6% of these patients in contrast to the full blown Pickwickian syndrome cases. These random cases of obesity also did not demonstrate polycythemia. Lastly, these authors feel that although the Pickwickian syndrome may exist, it represents only a small segment of the obese population.

"Therefore, having re-examined in the light of this further experience the concepts advanced in earlier case reports directing attention to the cardiopulmonary effects of extreme obesity, we propose that: (1) A variety of effects upon the function of the heart and lungs may accompany the development of extreme obesity. Great variations in severity of these effects in individual cases, even with comparable amounts of excess weight, make for considerable heterogeneity in the clinical and physiologic picture. The Pickwickian or cardiopulmonary syndrome, although taken in its broadest sense to involve hypoventilation with or without heart failure, is not characteristic of extreme obesity as seems to be implied in the recent literature. On the contrary, it is representative at best of only a small segment of the extremely obese population. (2) Congestive heart failure, although not common, does occur in subjects with long-standing obesity of extreme

degree with or without elevation of systemic arterial pressure. It is usually characterized by high cardiac output and insufficiency of both ventricles, predominantly the left. No convincing clinical, physiologic or pathologic evidence is presently available to indicate that uncomplicated

obesity of extreme degree gives rise to the development of isolated cor pulmonale."

Obesity is a serious threat to health. A great effort should be made by the medical profession to reduce the weight of obese patients.





## Smith Kline & French Foreign Fellowships To Be Awarded Again This Year

The Association of American Medical Colleges announced today that Smith Kline & French Foreign Fellowships for Medical Students will be awarded again next year. The Fellowships provide approximately 30 students with the opportunity to assist and observe physicians at rural medical stations in remote and underdeveloped areas of Latin America, Asia, Africa, and Oceania.

Dr. Ward Darley, executive director of the Association, stated that the Association is now accepting applications from junior and senior medical students for the Fellowships and that application forms and brochures have been sent to all medical school deans. The closing date for submitting applications is December 31, 1963.

The fellows gain firsthand experience with diseases not common in the United States, and they are exposed to unusual clinical and preventive health problems in societies and cultures different from their own.

Students should contact their deans for instructions and application forms.

#### Doctor May Huff, Public Will Puff

A widely circulated State Health Board report, which usually deals in statistics of various kinds, surprised its readers last week with some comments on a current controversial subject—smoking and cancer.

Dr. William L. Bunch, Jr., director of communicable diseases control division, had some rather pointed remarks to make in warning against use of tobacco and even brought in the profits of the tobacco companies and the fact that taxes on cigarettes are used for educational institutions as a means for justifying them.

The doctor's comments were so uncommon to the manner in which information comes from the State Health Department—it is usually cold, hard statistics against which no one can argue—that he was asked how he came to attack this controversial matter.

As far as he is concerned, he said, the subject is not a controversy at all, but a matter of record that smoking is detrimental to health. It has been proved definitely that all cancer does not come from smoking he added. "We do not know enough about the disease to say that," he said, but using some medical terms he described how smoking can increase the risk of cancer in a person who already has a high susceptibility to the disease. "We do know that smoking causes tumors," he said.

Dr. Bunch doesn't smoke. He gave it up 15 years ago but recalls, "They weren't even talking about the relation of smoking to cancer in those days. I had two gastric hemorrhages and decided I had better quit."

A call went to Revenue Commissioner J. Orville Cheney to see if the people of Arkansas have

been scared by the smoking-cancer reports.

"Not at all," he said, and gave these figures. Arkansas has a six-cent a pack tax on cigarettes. This brought in \$10,698,260 for the fiscal year ending July 1, 1963. This compared to \$9,959,341 for the previous 12 months. Chency commented: "The revenues from cigarettes are going up all the time."

#### THE MONTH IN WASHINGTON

Washington, D.C.—The Food and Drug Administration has proposed banning more than 50 so-called "cold cure" prescription drugs containing antibiotics and other anti-microbial agents. The action was recommended by a team of leading medical scientists who found that the antibiotics have no effect whatsoever on the common cold.

This proposal followed an earlier FDA crack-down on a wide variety of over-the-counter lozenges, nose drops and sprays, mouth washes and deodorants, skin lotions and ointments containing antibiotics. It was estimated that about 200 such compounds were affected.

The most recent FDA proposal would prevent the certification of prescriptions which include antibiotics in conjunction with analgesics, antihistanrines, decongestants, and caffeine. It would affect only prescription drugs taken by mouth.

The order also would initiate regulatory action, if necessary, to remove from the market analgesics, decongestants, caffeine and anti-histamines when mixed with any other anti-microbial agents, primarily the sulfa family.

At the request of the FDA, the National Academy of Sciences had named a panel to evaluate the "cold cures." The chairman was Dr. Harry Dowling, chairman of the American Medical Association Council on Drugs and on the Faculty of the University of Illinois School of Medicine.

The panel unanimously concluded:

- 1. There is no acceptable evidence that any anti-microbial agent is of any value in the treatment of the common cold or any other upper respiratory viral infection.
- 2. Anti-microbial agents are of no value in preventing bacterial complications in patients with common colds who are otherwise healthy, and therefore should not be used. They may have some value in patients with underlying chronic pulmonary disease. When prophylactic therapy of respiratory infection is justified, the antimicrobial agent that may be used must be one

that is relatively free of inherent toxicity. This would preclude the use of chloramphenical, triacetlyloleandomycin, and/or sulfonamide products.

3. The antibiotic in a drug which includes analgesics, antihistaminics, and possibly decongestants would have no effect on the cold itself and there is insufficient clinical evidence to show that it would be of value in the prevention of complicating infections of a cold. The symptomatic relief that may be provided by the other ingredients of such a preparation is no justification for any such product to contain an antimicrobial agent.

The Pharmaceutical Manufacturers Association (PMA) and 37 prescription drug producers challenged in a federal district court the legal validity of a drug advertising and labeling regulation recently promulgated by the Food and Drug Administration (FRA).

The action, filed in the U. S. District Court in Wilmington, Del., alleged that the regulation is "unauthorized by and contrary to law."

Secretary of Health, Education and Welfare, Anthony J. Celebrezze, and Food and Drug Commissioner, George P. Larrick, were named as defendants.

The controversial regulation was issued last June 20 as a result of the 1962 amendments to the Food, Drug, and Cosmetic Act. The amended law requires only that "established names" of prescription drugs be printed in labeling and advertising "prominently and in type at least half as large as that used for any proprietary name." While on the other hand the regulation would require the established name to appear "each time" the protected trademark or brand name appears in an advertisement or on a label.

Established names of drugs usually are originated by manufacturers in connection with the U. S. Pharmacopeia and the American Medical Association. An established name may be used only by a single producer to identily himself and his product.

The plaintiffs pointed out that drugs with the same established name may differ in therapeutic effect because of varying inactive ingredients and manufacturing methods.

The plaintiffs, also said that, in addition to going beyond statutory authority, the regulation requiring repetition of the established name with

each use of a protected brand name on a container label, in a package insert, or in any advertising to physicians would be confusing and would make reading more difficult, to the detriment of doctors and ultimately their patients.

# Common Cold Major Medical Cause of School Absences in Arkansas

The common cold continues to be the largest single factor contributing to the 19.6 days per school year the average Arkansas student is absent from school, according to a study by Schering Corporation, a leading pharmaceutical company.

The first onslaught of colds strikes the schools almost as soon as children reassemble for the new year. One contributing factor to this, according to research scientists, is that spread of colds, like other virus-caused infactions, is accelerated by the mixing of populations. In fixed stable groups which are not exposed to strangers, cold-like infections tend to die out, and do not reappear until there is contact outside the group.

The best defense against the common cold is prevention. Warm clothing should be worn, and good diets planned. Whenever possible avoid contact with a person suffering from a cold.

Medicines, of course, are important. A recent survey by a drug industry publication revealed that only one out of eight home medicine cabinets is fully equipped with products needed in common types of health situations arising in the home, such as the cold. The list of 11 "basic" supplies recommended includes: gargle, antihistamine-aspirin (such as Coricidin), cotton swabs, stomach settler, laxative, cough syrup, eye drops, decongestant, fever thermometer, bandages and an analgesic.

#### ANSWER-What is Your Diagnosis?

Diagnosis: Carcinoma of the head of the pancreas.

X-Ray Features: The duodenal curve is widened and rounded. The central portion of the stomach is also deformed. The mucosal pattern of the duodenum is irregular and at the bottom of the loop there is actual invasion of the duodenum by tumor.

# Application Activity and MCAT DATA of Applicants to the Class of 1962-63

The number of applicants accepted for enrollment in U. S. medical schools increased in 1962-63. This continues the trend to previous years for existing schools to expand their enrollments. A total of 8,959 students were accepted, an increase of 277 or 3.2 per cent over last year. This year's increase is due, in part, to the addition to the roster of U. S. medical schools of the California College of Medicine. This school accepted 94 students for its freshman class of 1962-63.

Most noteworthy is the increase in the total number of applicants in 1962-63 of 1,466 or 10.2 per cent over 1961-62, the first such increase since 1956-57. At the same time, college enrollments have increased significantly.

# State Hospital Staff Member Makes Up His Own Medicine

A medical preparation manufactured at the Benton Unit of the State Hospital has been named the "Saline Mouth Wash," according to Dr. J. G. Cullins, a staff physician who originated the product.

Dr. Cullins, a registered pharmacist, said the drug department of the hospital also makes skin ointment and a liquid laxative for use at the hospital.

One of the drugs he makes, which he named "Skin RX," contains a softening agent and anti-

#### ANSWER-Electrocardiogram of the Month

AGE: 44 SEX: F BUILD: SLENDER

BLOOD PRESSURE: 120/70

MEDICATION: None

HISTORY: Syncope on bending over.

RATE: 60 Rhythm: Sinus

PR: .14 sec. QRS: .07 sec. QT: .36 sec.

INTERPRETATION: Within normal limits.

COMMENT: This slender patient had a large luetic aneurysm of the ascending aorta. Aorta insufficiency had not occurred and the syncope was due to other causes.

septic for the skin. It is colored light green and will not stain the dresses of the women in the wards.

The third preparation made at the hospital is an aromatic magnesium sulfate solution of Epsom salt.

The druggist also makes a "medicine," more in the nature of a placebo, for the patient "who has lots of complaints but no disease," Dr. Cullins said. It contains a simple syrup, vanilla, a coffee extract and sugar.

When Dr. Cullins describes it to persons taking it, it contains syrup simplex with vanillin and cafe extract, sucrose and saccharin. These terms sound more imposing, but the concoction still doesn't do anything but give a slight energy lift, Dr. Cullins said. He sometimes takes it himself for that purpose he added.

When patients take this mixture, it clears up their symptoms right away, he said.

#### **Rural Health Conference At Hot Springs**

Several persons represented Boone County at the National Rural Health Conference in Hot Springs, September 20-21.

The conference which Arkansas hosted was sponsored by the American Medical Association Council in Rural Health.

Purpose of the conference was to stimulate interest in rural health and point out health problems facing the nation, many of which can be solved through education of the people, especially in the rural areas.

#### Dr. Fowler Holds Open House

Dr. W. Gerald Fowler held open house at his office in Huntsville Sunday, September 7, between the hours of 2 and 4 in the afternoon.

Dr. Fowler opened his office for the General Practice of Medicine Tuesday morning, September 3, in the building formerly occupied by the late Dr. Charles Beeby.

#### New Physician Opened Offices in Lepanto, Arkansas

Dr. Bruce Ivy, Jr., recently of Baton Rouge, Louisiana, has opened offices in the Medical Arts Clinic Hospital in Lepanto, previously occupied by the late Dr. Saul Sternberger, Jr. Dr. Ivy arrived Friday, August 30.

Prior to his private practice in Baton Rouge, Dr. Ivy served as Director of the Hospital at Louisiana State University. He was graduated from the Uni-

versity of Arkansas and the University of Tennessee School of Medicine in Memphis. After serving an internship at the University of Texas Hospital, Galveston, Dr. Ivy took Residency training at the University of Texas and completed work in the Post-Graduate School of Medicine at Houston, Texas.



#### Congresses of Proctology To Be Held In Montevideo and Punta Del Este, Uruguay

The Third International, Second Latin-American and First Uruguyan Congresses of Proctology will be held in Montevideo and Punta Del Este, Uruguay December 9 through the 15th.

The Subjects discussed will be: Diverticulosis of colon and its complications; Complications and sequelae of ano-recto-colonic surgery; and, Diagnosis and treatment of early cancer and preneoplastic diseases of anus, rectum and colon. All subjects will include lectures, films, free papers and expositions.

There will be a panel discussion of Diagnosis and Treatment of early cancer and pre-neoplastic diseases of anus, rectum and colon.

# Diagnosis and Medical Management of Chronic Ulcerative Colitis

"Diagnosis and Medical Management of Chronic Ulcerative Colitis," is a 31 minute color film with endoscopic views of ulcerative colitis with particular emphasis on its diagnosis, parhology, complications and treatment. The 16mm color-sound film was drawn from the extensive clinical experience of Dr. N. C. Hightower, Jr., and his associates at Scott and White clinic in Temple, Texas.

This film is available without charge for medical audiences. Contact Pharmacia Laboratories, Inc., 501 Fifth Avenue, New York 17, New York.

#### **Tuition Fund For Nurses, Technicians**

A student loan fund has been established by the Boone County Medical Society for training medical personnel to staff expanding medical facilities in the Harrison Area.

The doctors will make available to qualified residents of Boone, Newton, and Marion counties interest free loans to cover the tuition in approved courses of practical nursing, nursing, medical technology, X-Ray technology, and related fields.

The funds were donated by local doctors and residents of the three county area at the polio immunization clinics held in the spring.

Information may be obtained from any member of the medical society.

#### Call For Scientific Exhibits and Motion Pictures

Those who desire to present scientific papers before the Sections of the Scientific Assembly should communicate with the Secretary of the appropriate Section well in advance of the deadline date, December 15, 1963. The Secretaries and their addresses are listed in THE JOURNAL of the AMA in the last issue of every month.

Those who wish to apply for space in The Scientific Exhibit should request application forms from the Director, Scientific Exhibit, Department of Scientific Assembly, American Medical Association, 535 No. Dearborn St., Chicago 10, Illinois, well in advance of the deadline date for receipt of applications, January 10, 1964.

Those who desire to present motion pictures should request application forms from the Director, Medical Motion Pictures and Television, Department of Scientific Assembly, American Medical Association, 535 No. Dearborn St., Chicago 10, Ill., well in advance of the deadline date, January 10, 1964.

#### Boone County Medical Society Plans Program

Doctors and their wives planning to attend the homecoming football game in Fayetteville on Saturday, November 23, 1963, are cordially invited to stay at Harrison Friday and Saturday nights. The Boone County Medical Society will present a medical program Friday night and Saturday morning. The driving time from Harrison to Fayetteville is an hour and one-half.

Reservations should be made in advance and these places may be called for reservations: (1) Holiday Inn - Harrison - Highway 62-65 North. (2) Siesta Motel - Highway 62-65 South (3) Oasis Motel - Highway 62-65 South (4) Harrison Motor Court - 310 North Walnut, Harrison (5) Seville Motor Hotel - 302 No. Vine Street, Harrison.

The Boone County Medical Society's program will start at 7:00 p.m. Friday night with registra-

tion and a social hour at the Holiday Inn. At 8:00 there will be a buffet supper at the Inn, and at 9:00 there will be the scientific program. Dr. William A. Hudson from Harrison and Dr. Deane D. Wallace from Little Rock will speak. Saturday morning at 8:00 there will be the grand rounds of the Boone County General Hospital, and visits at Hillcrest and Harrison Nursing Homes. Saturday evening after the football game, there will be a social hour and dinner at the Seville Motor Hotel.

#### **Tenth Annual General Practice Review**

The University of Colorado will host the tenth annual General Practice Review, January 12 through 18, 1964 at Denver.

The Annual Post-Graduate Course designed especially for the General Practitioner will hold an entirely different course every day. You can register for all of the courses given or any one particular course. Sunday - Obesity, Monday - Medicine, Tuesday - Pediatrics, Wednesday - Surgery, Thursday - Dermatology, Friday - Obstetrics and Gynecology, Saturday - Fluid and Electrolytes.

For further information write to: The Office of Postgraduate Medical Education, University of Colorado School of Medicine, 4200 East 9th Avenue, Denver, Colorado.

# Postgraduate Conference on Pediatrics To Be Held In February

The Department of Pediatrics of the University of Arkansas Medical Center will present a Post-graduate Conference on February 5 and 6, 1964. Guest speakers will include professors of pediatrics in various universities in the Southwest. They include: Blair E. Batson, Jackson, Mississippi; C. W. Daeschner, Jr., Galveston, Texas; James G. Hughes, Memphis, Tennessee; and Harris D. Riley, Jr., Oklahoma City, Oklahoma.

# Twelfth Annual Conference Of The United States Civil Defense Council

The Twelfth Annual Conference of the United States Civil Defense Council will be held October 20 through 25, 1963, in War Memorial Auditorium at Rochester, New York.

## Fourteenth National County Medical Societies Conference on Disaster Medical Care

This year the Fourteenth National County Medical Societies Conference on Disaster Medical Care will consider in symposia and workshops the basic requisites to disaster planning and the resources available in the community in disaster situations. Dates: Saturday and Sunday, November 2 and 3, 1963. Place: Pick-Congress Hotel, Michigan and Congress Parkway, Chicago, Illinois.

As in the past, a fee of \$10.00 will be charged to pay, in part, for the two luncheons and other functions scheduled in connection with the Conference.





#### PERSONAL AND NEWS ITEMS

#### Dr. Robinette Touring Europe As World Trade Delegate

Dr. J. S. Robinette of 901 West 44th Street, Pine Bluff, went on a tour of six European countries as a member of a world trade delegation from International House in New Orleans. International House is an organization which tries to foster international goodwill and trade among nations. The delegation left August 16 from New York after a briefing at the United Nations. Dr. Robinette was gone about two weeks.

#### **Doctors Complete AF Orientation**

Captain William H. Goodloe, Jr., and Captain W. Ragon Thompson have completed the orientation course for officers of the United States Air Force Medical Service at Gunter AFB, Alabama.

Captain Goodloe is being reassigned to Barksdale, AFB, Louisiana. He will join the medical staff there for practice as a physician. He attended Southwestern University, Georgetown, Texas, and Tulane School of Medicine.

Captain Thompson is being reassigned to Zaragoza, AB, Spain. He will join the medical staff there for practice as a physician. He attended the College of the Ozarks and the University of Arkansas Medical School.

#### Dr. Fowler Opens Office In Huntsville

Dr. W. Gerald Fowler, has opened an office in Huntsville for the general practice of medicine. His office will be located in the building formerly occupied by the late Dr. Charles Beeby, on Main Street.

Dr. Fowler is a graduate of the University of Arkansas and the University of Arkansas School of Medicine. He served his internship at St. Vincent Charity Hospital in Cleveland, Ohio, and took one year of internal medicine residency at Crile' Veterans Hospital, Cleveland, Ohio. For the past two months he has been taking advanced training in pediatrics at the University of Arkansas Medical Center in Little Rock.

#### New Clinic In Beebe

Drs. James D. and J. Garret Kinley held "open house" in their newly constructed Clinic, Sunday, September 1 from 2:00 to 4:00 p.m. in Beebe.

The new building is located on West Center Street. It is equipped with the latest of equipment. Within the 2600 square feet of floor space is a spacious waiting room, X-Ray and four examining rooms, a laboratory with an emergency and recovery rooms as well as private offices for each of the physicians.

## Dr. Kolb Elected Chairman Of The Clarksville Airport Commission

Dr. James M. Kolb, Sr., Clarksville, has recently been elected chairman of the Clarksville Airport Commission. He has been vice-chairman since it was founded in 1957.

#### **FEATURES**

#### Dr. Ashley Moves To Newport Clinic

Dr. John Ashley, who has had his offices at 309 Second Street, has moved to the Newport Clinic as of August 29, 1963. Dr. Ashley had been located on Second Street in Newport for about six years.

#### Dr. Hayden Goes To Forrest City

Dr. William Floyd Hayden has moved to Forrest City to join Dr. A. M. Bradley in the practice of medicine. Dr. Hayden served the past year in residency at the Veterans Hospital in Little Rock.

He attended Hendrix College and graduated with a bachelor's degree before entering the University of Arkansas School of Medicine. He graduated with a medical degree in 1961 and interned at St. Vincent's. He served four years as a Naval fighter pilot with the rank of senior grade lieutenant. He also was in the Naval Reserve eight years.

#### Dr. Robins Speaks at Kiwanis Meeting

"The Outlook for Mankind" was the topic for a talk by Dr. R. B. Robins at a meeting of the Kiwanis Club at the Rufus Garrett Hotel, September 4, in El Dorado.

Dr. Robins, a Camden physician, is a native of Arkansas. He earned his Bachelor's degree at Hendrix College in 1921 and his Master's and MD degrees at the University of Chicago, Illinois. Dr. Robins has served as district governor for Lions International. He is past president of the Arkansas Medical Society, one of the founders and past president of the American Academy of General Practice, which is the second largest medical organization in America, and was vice president of the American Medical Association in 1950 and is presently serving as a member of the board of trustees of the AMA.

#### Dr. Carruthers Invited To Guest Speak

Dr. F. Walter Carruthers recently was invited to guest speak before the staff of the Social Security Hospital in Puebla Pue, Mexico. He discussed surgery of the knee joint, with motion picture demonstrations.

# Colonel Mildred Irene Clark Becomes Chief Of Army Nurse Corps

The Army Nurse Corps acquired its twelfth Chief today when Mildred Irene Clark was promoted to full colonel and sworn in at a ceremony in the Army Surgeon General's Office. Effective date of the appointment was September 1, 1963.

Colonel Clark, daughter of Mrs. W. J. Clark of

Clarkton, N. C., is a graduate of the Baker General Hospital School of Nursing at Lumberton, N. C., with post graduate work in pediatrics at Babies' Hospital, Wilmington, N. C., and Operating Room Administration and Techniques and Anesthesiology at the Albert Einstein Medical Center, Philadelphia, Pa. She is also a graduate of the Medical Service Officers' Advanced Career Course, Medical Field Service School, Brooke Army Medical Center, Fort Sam Houston, Texas, and earned her Bachelor of Science degree "with distinction" from the College of Education, University of Minnesota. She has continued her postgraduate work at the University of Colorado, and the University of New Mexico.

#### Dr. Donald L. Cohagan To Begin Medical Practice Here

Dr. Donald L. Cohagan, has been granted temporary staff privileges at Bates Memorial Hospital, which will become permanent.

A graduate of the University of Missouri School of Medicine, Dr. Cohagan completed his internship at Jackson Memorial Hospital at Miami, Florida, in 1961, and then entered the U. S. Air Force. He completed his tour of duty, and was discharged August 6, 1963.

Dr. Cohagan will begin his medical practice in Bentonville, in the near future, with offices in the Medical Arts building formerly occupied by Dr. Henry Hink.

#### Dr. Hawkins Returns Home From Boston

M. C. Hawkins, Jr., M. D. returned home to Searcy, Sunday, August 25, from Boston after two weeks of informal post-graduate training in surgery and gynecology in the Harvard Medical School teaching hospitals and the hospitals used by the staff of Lahey Clinic.

# CONTRIBUTORS TO THE AMERICAN MEDICAL ASSOCIATION EDUCATION AND RESEARCH FOUNDATION From Arkansas

#### July 1963

00.7	
Dr. Wade W. Burnside, 207 East Dickson	n,
Fayetteville	\$10.00
Dr. LeMon Clark, 241 West Spring,	
Fayetteville	25.00
Dr. James K. Patrick, 241 West Spring,	
Fayetteville	5.00
	,
	\$40.00



DR. FRED T. HARGROVE is a new member of Baxter County Medical Society. A native of Lockesburg, Arkansas, he received his pre-medical education from the University of Oklahoma. In 1934, he received his M. D. degree from the University of Oklahoma School of Medicine. He practiced at Duncan, Oklahoma from 1935 - 1939; Monett, Missouri, from 1939 - 1947; Springfield and St. Louis, Missouri, from 1947 - 1951; Paris, Texas, from 1956 - 1962; Shreveport, Louisiana, from 1961 - 1963. He is now located in Mountain Home, Arkansas, at 719 Langston. Dr. Hargrove's specialty is radiology.

A new member of Sebastian County Medical Society is DR. LAURENCE G. CHRISTIE, JR. He is a native of Houston, Texas, and he received his preliminary education from Washington and Lee University of Lexington, Virginia. His M.D. degree was received from the Medical College of Virginia in 1957. His specialty is general surgery. Dr. Christie's office is located at 314 North Greenwood in Fort Smith, Arkansas.

Benton County Medical Society announces that DR. D. L. COHAGAN is a new member. A native of Kirksville, Missouri, he received his preliminary education from the University of Missouri. His M.D. degree was obtained from the University of Missouri School of Medicine in 1960. He served in the U. S. Air Force from 1960 until 1963. Dr. Cohagan's office is located at 216 North Main in Bentonville, Arkansas. He is a general practitioner.

DR. B. G. KISTLER is a new member of Benton County Medical Society. Born at Lubbock, Texas, he received his pre-medical education from the University of Arkansas. In 1962, he received his M.D. degree from the University of Arkansas School of Medicine. His office is located at 103 South 12th Street in Rogers, Arkansas. Dr. Kistler is a general practitioner.

DR. ROBERT F. SHANNON is a new member of Pulaski County Medical Society. A native of Melbourne, Arkansas, he received his pre-medical education from Arkansas State Teachers College. In 1957, he received his M.D. degree from the University of Arkansas School of Medicine. Dr. Shannon is an instructor in psychiatry at the University of Arkansas Medical Center.

Pulaski County Medical Society announces that DR. JIM J. MOORE is a new member. Born at Fort Smith, Arkansas, he received his preliminary education from the University of Arkansas. He received his M.D. degree from the University of Arkansas Medical School in 1955. His office address is 338 Waldon Building in Little Rock. Dr. Moore's specialty is neurological surgery.

A new member of Independence County Medical Society is DR. JAMES M. ROBINETTE. A native of Louisiana, he received his preliminary education from Texarkana College in Texarkana. His M.D. degree was received in 1962 from the University of Arkansas Medical School. Dr. Robinette's office is at Newark Clinic in Newark, Arkansas. He is a general practitioner.

DR. ELMER G. WAKEFIELD is a new member of Miller County Medical Society. Born at Nashville, Arkansas, he received his pre-medical education at Russellville, Arkansas. In 1925, he received his M.D. degree from Johns Hopkins University in Baltimore, Maryland. Dr. Wakefield's specialty is internal medicine and his address is Lakewood Estates, Texarkana, Arkansas.

A new member of Pulaski County Medical Society is DR. DAVID HARTON NEWBERN. A native of Little Rock, he received his premedical education from the University of Arkansas. In 1955, he received his M.D. degree from the University of Arkansas Medical Center. Dr. Newbern is now practicing in Little Rock and his office address is 607 Donaghey Building. His specialty is radiology.

DR. KINGSLEY WHITE COSGROVE, JR., is a new member of Pulaski County Medical Society.

Born at Little Rock, his pre-medical education was received from Harvard University. His M.D. degree was obtained from the University of Arkansas School of Medicine in 1957. His office is at 516 Scott Street in Little Rock. Dr. Cosgrove's specialty is ophthalmology.

malaria in the areas in which the United States Army was operating in World War II. Malaria control was an out; standing accomplishment of the Medical Department of the United States Army. There are many interesting and valuable lessons contained in this outstanding report. Anyone interested in malaria control or military medicine should read this book.



#### **BOOK REVIEWS**

CURRENT THERAPY, Edited by, HOWARD F. CONN, M.D., pp. 775, Published by the W.B. Saunders Company, Philadelphia and London.

This standard textbook of treatment has been revised again this year. The book is written by a group of consulting editors under the direction of Dr. Howard F. Conn. The consultants are outstanding authorities in their fields and the information in this book is authentic, accurate and concise. It is not encyclopedic. This book will prove extremely helpful as a reference manual on the teaching wards or in the physicians office. It is recommended as being an excellent outline of therapy.

SURGERY, By Richard Warren, M.D., pp. 1397, published by W. B. Saunders Company, Philadelphia & London. 1963. Illustrated.

This is an outstanding text book of Surgery edited by Dr. Richard Warren with chapters written by various members of the faculty of Harvard Medical School. This text is quite complete. It has a moderate number of illustrations. The text is somewhat terse but adequate. It is a moderately good bibliography. The text included some discussion of technique although the book is primarily aimed at the surgical diseases and their treatment generally, rather than trying to teach surgical technique as an atlas of surgery might do. This is an outstanding textbook for medical students, house staff and general physicians.

ENDOCRINE AND METABOLIC ASPECTS OF GYNE-COLOGY, By Joseph Rogers, M.D. Associate Professor of Medicine and Lecturer in Gynecology and Obstetrics. Tufts University School of Medicine; Physician, Pratt Clinic—New England Center Hospital, pp. 189, illustrated published by W. B. Saunders Company, Philadelphia and London, 1963.

This is a most interesting brief book. It discusses the Endocrine and Metabolic side of Gynecology in such a manner that it can be readily understood by the practicing physician. It will be of considerable interest to the medical student, house staff and general physician.

PREVENTIVE MEDICINE IN WORLD WAR II, Volume VI, prepared and published under the direction of Lieutenant General Leonard D. Heaton, The Surgeon General, United States Army, pp. 642, illustrated, 1963.

This is an extremely interesting book on combating

#### LETTERS



Dr. Alfred Kahn, Jr., Editor Arkansas Medical Journal 1300 West Sixth Street Little Rock, Arkansas

Dear Dr. Kahn:

May I express my sincere thanks and appreciation for your acknowledgment of my article in the May issue of the Journal of the Arkansas Medical Society.

I am sure I speak for the dental profession when I say that the cooperative exchange of information between the two professions is a step forward in melding the progress of medicine.

I am enclosing an article which may be of interest to you and the medical profession, pertaining to supplemental additives of the fluoride ion to deficient water supplies and/or to the avenues of administration. If you find it of interest, you may publish it to fit your needed material in future publications.

Again, may 1 thank you, and am looking forward to meeting you in the near future.

Sincerely yours,
Lawrence D. Furlong, D.D.S., M.P.H.
Director
Bureau of Dental Health

#### TUBERCULOSIS



#### ABSTRACTS

Sponsored by Arkansas Tuberculosis Association

Differences of opinion on the management of spontaneous pneumothorax led a group at the Mayo Clinic to review the cases treated there over a 12-year period. For first attacks surgery did not appear indicated, but was frequently advisable for recurrent episodes.

Because of lack of agreement concerning the proper treatment of spontaneous pneumothorax, it was decided to review the records of the cases with this condition diagnosed during the years 1945 through 1956 at the Mayo Clinic.

Excluded from the study were all cases caused by accidental trauma or by thoracic operations and those related to obvious intrapulmonary disease such as lung abscess with perforation into the pleural space. Patients with a pneumothorax produced intentionally for diagnostic or therapeutic purposes also were excluded.

Data abstracted from each record included history of previous episodes of pneumothorax and of chronic pulmonary disease, the activity of the patient at the time of onset of the pneumothorax, and the symptoms of the attack which prompted the patient to seek medical care at the Clinic.

Roentgenograms of the thorax were reviewed to determine the degree of collapse of the affected lung, the presence of pulmonary disease, and the occurrence of pleural effusion. Data were also obtained regarding the treatment of the patient and the results of treatment.

Of 157 cases included in the investigation, 109 had come to the Clinic during their first episode of spontaneous pneumothorax; the remaining 48 had had two or more attacks. There were 32 women in the series and 125 men.

Of the 109 cases of initial attack, 58 were on the right side, 47 on the left, and 4 were bilateral. Of the 48 recurrences, 26 were on the right, 19 on the left, and 3 were bilateral. All of the attacks had occurred on the same side in 31 of the

DAVID T. CARR, M.D.; ARTHUR W. SILVER, M.D.; and F. HENRY ELLIS, JR., M.D., Proceedings of the Staff Meetings of the Mayo Clinic, March 13, 1963.

recurrent cases; on the contralateral side in 8; and on both sides in 9 but not simultaneously in all cases. Three of the 48 had had more than five previous episodes of pneumothorax.

#### LITTLE CHRONIC RD

Association of spontaneous pneumothorax with chronic respiratory disease was not common in the patients, there being no history of such in 85 (78 per cent) of those with original attacks and 42 (87 per cent) of those with recurrent attacks. Asthma or chronic bronchitis and emphysema were the most prevalent chronic pulmonary diseases among the rest of the group. There was no evidence that collapse of the lung was precipitated by any particular exertion. The most common symptoms were dyspnea, pain in the chest, and cough. Some had no symptoms at all and the pneumothorax was discovered when a roent-genogram of the thorax was made for other reasons.

Since treatment was not initiated for all of the patients while they were under our care, the data on therapy do not include all patients. Some patients, however, had more than one form of treatment. Forty patients with initial attacks and eight with recurrent attacks were treated by rest. In 43 the lung reexpanded satisfactorily but the other five required more vigorous treatment. Pneumothorax recurred in only 6 cases during an average follow up period of 71/2 years.

#### AIR AND FLUID ASPIRATED

Fifty-four patients with initial attacks and 25 with recurrent attacks were treated by insertion of an intercostal cannula or catheter and prolonged aspiration of air and fluid from the pleural space. In 55 the lung reexpanded satisfactorily. Thirty-nine had no further troubles during an average follow up period of more than 5 years.

Surgical treatment by thoracotomy was advised and performed for six of the 109 patients with an original pneumothorax. This treatment was

chosen because of apparent pleural or pulmonary disease or because of the duration of the pneumothorax prior to consultation at the Clinic. The surgeon found that three of these patients had emphysematous blebs. One patient had only a pleural exudate and the other two had no demonstrable abnormality. The surgical procedure depended on the disease that was detected. The blebs were resected, the pleura decorticated or simply abraded and, in one case, a parietal pleurectomy was performed. All patients had good results, none having another pneumothorax during an average follow-up of 5 years.

Good results were also obtained by surgical treatment of 40 patients whose penumothoraces were recurrent. Subpleural blebs were detected in 26 of these. The surgical procedure varied from simple abrasion of the pleura or application of talc to the pleura to cause adhesions to actual parietal pleurectomy, the last operation being carried out in 14 cases. Lung tissue was resected when this seemed advisable. A simple wedge resection was adequate in most cases but a lobectomy was needed in six and the entire lung was removed in two. None of these patients had a

recurrence on the ipsilateral side during the follow-up period, which averaged 4.4 years. However, five had spontaneous pneumothorax on the contralateral side between 10 days and 5 years later.

Follow up revealed that 21 of the 157 patients had died. Fourteen of these deaths were unrelated to the pneumothorax. In seven there might have been a significant relationship.

#### COMMENT

Since this was not a controlled study the results of one group cannot be compared with those of the other to determine which is the better treatment for general use. However, the data can be used to evaluate, in a broad sense, the management of patients with spontaneous pneumothorax.

While the success of the simpler modes of therapy, particularly for patients with an initial pneumothorax, is a potent argument against the routine use of the more radical surgical treatment, simple rest or continuous aspiration of air from the pleural space is not adequate treatment for all patients.



#### Hypoglycaemia in the Newborn Infant

R. J. K. Brown and P. G. Wallis, *Lancet* 1:1278 (June 15) 1963

Symptoms associated with low blood glucose levels were observed in ten newborn infants during their first 3 days of life. Treatment was at first inadequate and death occurred in two infants while varying degrees of brain damage occurred in four who recovered. In the last four cases more vigorous intravenous glucose therapy with early high calorie feeding resulted in complete recovery without residual brain damage. All babies in this series were below expected birth weight and nearly all showed gross malnutrition. It is postulated that intrauterine malnutrition predisposes to neonatal hypoglycemia, because the baby has depleted fat and glycogen stores which are readily exhausted. Thus, some babies had low blood glucose levels without symptoms but responded well to injected epinephrine or glucagon (suggesting that reserves were still present), whereas babies with symptoms showed little or no response to glucagon, until they had recovered.

# Mohs' Chemosurgery Technique in Basal Cell Carcinoma of the Chin and Cheek Areas of the Face

J. T. Phelan and J. Juardo, Arch Surg 87:212 (Aug) 1963

Observations made on 16 patients treated by Mohs' chemosurgery technique showed that the procedure is a highly effective method of treating basal cell carcinoma of the chin and cheek areas. In each case, satisfactory tumor removal and cosmetic results were observed. Because this procedure utilizes microscopic controlled excision as its basic principle of technique, the authors believe that total tumor removal is accomplished with a greater degree of reliability than by current radiation and surgery methods, where the tumor field is judged solely by the clinical appearance of the tumor. In addition, wide margins of normal tissue are not unnecessarily sacrificed, and because chemosurgery wounds are permitted to heal by secondary intention, the recovery period is not complicated by a plastic reconstructive procedure.

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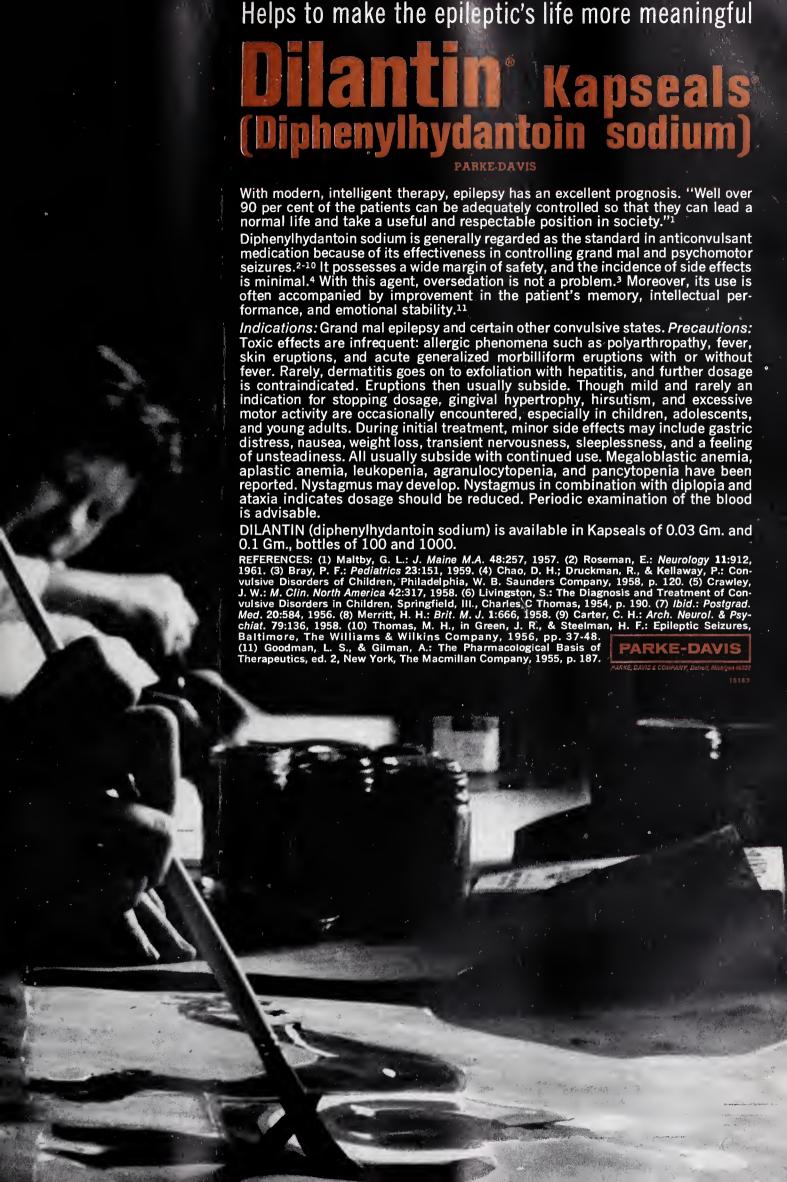
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NEWS-Our readers are requested to send in items of news, also marked copies of newspapers containing matter of interest to the membership.

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## THE JOURNAL OF THE ATRANSAS MEDICAL SOCIETY

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## NASAL INJURIES\*

Daniel D. Klaff, M.D.

St. Louis, Missouri

The increasing incidence of injuries to the nasal complex, either the external nose and/or the nasal septum, suggests the need to re-emphasize phases of management, particularly of trauma to the cartilaginous and mucosal structures.

Cottle<sup>1</sup> has described deformities of the nose occurring during birth or in utero. Cottle<sup>2</sup>, Loring, Philpott, and Gaynon have presented figures of 5-7% as the frequency of injury to the nose that can be observed at birth. These injuries are often manifested externally by a flattening of the lobule.

Early care of this deformity, preferably age 3 days, should minimize or prevent later symptom producing asymmetries. This requires the cooperation of the general practitioner, obstetrician, pediatrician and rhinologist for recognition and treatment.

In the young child, if a direct anterior-posterior impact is produced against the nose there results an accordion-like buckling of the nasal septum. The anterior portion of the septal cartilage is fractured and transversely bends to produce almost complete obstruction to air passage through one nares. This deformity will not correct itself with growth of advancing age. Corrective surgery in these children need not be postponed or avoided for reasons of interfering with further development of the nose.

More recent methods of septal surgery<sup>1</sup> make it possible to correct this pathological disturbance with a minimum danger of impairing the development of the septum.

Embryologically<sup>3</sup> the nose is a cartilaginous structure which is partially replaced by bone and the child is more prone to soft tissue rather than bony injury.

Aside from architectural displacements of the rigid anatomical parts of the nose there are many injuries producing ecchymoses and/or hematoma to the soft tissues. These injuries may not be minimized because each cartilaginous portion is enclosed in its own perichondrial envelope; the septal cartilage, the lobular cartilages and the upper lateral cartilages. The cartilage quickly absorbs when subjected to pressure of subperichondrial hematoma or subcutaneous ecchymoses and edema.

Septal hematoma may cause the disappearance of septal cartilage if pressure is not relieved by incision and drainage. If palpation and inspection reveals such a loss of cartilage it is desirable to replace autogenous cartilage or bone between the septal flaps. Later sequela of sagging of the cartilaginous dorsum may be minimized by this operation. In less severe trauma as evidenced by ecchymoses of the septal mucosa or skin of the vestibule the use of anti-inflammatory enzymes given orally or intramuscularly may be helpful in lessening the degree of soft tissue edema. By the use of hyaluronidase injected into the effected soft tissues, edema quickly diminishes. Hyaluronidase may be added to the local anesthetic to permit more delicate palpation during the operative procedure.

When is the most desirable time to repair? A 48-hour conservative program using adhesive tape externally for pressure and ice packs to the nose should be applied if swelling and ecchymoses are extreme. We have found less massive bleeding during surgical intervention and less postoperative edema of the septum if this planned delay is instituted.

There is the possibility of serious injury being present even though X-rays may have been reported as negative for fracture of the nasal bones<sup>4</sup>

<sup>\*</sup>Presented before the General Session of the Arkansas Medical Society April 22, 1963.

X-rays may be ordered and used but do not depend upon them to reveal nasal injury. Negative films give a false sense of security. The occlusal view made with the film in the mouth is sometimes a great help in diagnosis.

Many patients with severe ecchymosis and hematoma of the nasal cartilages require treatment in spite of a negative X-ray report for nasal fracture. The alar retractor and otoscope with a large ear speculum are helpful instruments for visualizing any intranasal injury. Some of the common injuries are: lacerations of septal or inferior turbinate mucosa, hematoma of the septal mucosa, ecchymoses and hematoma of the upper lateral cartilages, and fractures and dislocations of the septal cartilage.

The slight bump on the bony dorsum of the nose can be very challenging depending on the sensitivity of both the physician and patient to the deformith. The X-ray may reveal a slight linear crack without any displacement of the fragments. However, the edema of the bony dorsum is sufficient to produce a slight hump that is not acceptable to the patient. Repeated taping of the dorsum of the nose and the opportunity to observe the recession of the edema may prevent a periostitis and subsequent permanent deformity.

The treatment for fractures of the nasal bones is well documented in many textbooks and journals. However, we should recall the need to repair the damaged cartilage when manipulating the fractured nasal bones<sup>4</sup>. If the cartilage is not repaired the bone will in the future twist and distort to conform to the shape of the cartilage. Concomitant nasal fractures and cartilaginous injuries require open reduction to prevent serious sequelae. A closed reduction should be performed where no cartilaginous injury exists.

#### Summary

The injured nose deserves careful examination of both its cartilaginous and bony components if the frequency of deformity following operative repair is to be reduced. When we succeed in evaluating cartilaginous damage as well as the bony injuries and bring the two together we will be able to accomplish our purpose.

These traumas are a challenge we face in preventing deformity even in cases that may appear to be nothing more than a "little bump on the nose." Emphasis is placed upon the recognition and care of cartilaginous injuries and some pitfalls in diagnosing fractures of the bony nasal vault.

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# Controlled Study of Disturbances Recorded Following the Use of Oral Poliomyelitis Vaccine P. N. B. Peacock, Canad Med Ass J 89:111 (July 20) 1963

A double-blind study of disturbances recorded after the administration of a live trivalent oral poliomyelitis vaccine and an identical-appearing placebo was undertaken. Seven hundred and forty-one persons, being 81% of the complete population of a small town, constituted the trial group. The two feedings, with a varied feeding sequence, were eight days apart, and at the second feeding and again eight days later, the partici-

pants were investigated under controlled conditions. There were no statistically significant differences between the number, nature, or timing of the disturbances reported after the administration of the two vaccines. With both vaccines, significantly fewer reactions were reported among males, among the under-5-year group, among occupational class 1, and after the first feeding as compared with the second. The Salk vaccine immunization status of the participants made no significant difference. With both vaccines 14% to 15% of the participants reported some "reaction."

## TUMORS OF SOFT SOMATIC TISSUES: CLINICAL MANAGEMENT\*

Richard G. Martin, M.D., R. Lee Clark, M.D., and E. C. White, M.D.

The University of Texos M. D. Anderson Hospital and Tumor Institute, Houston, Texos

The lesions which will be discussed in this paper are those which arise from the somatic soft tissues of the body. From the primative mesenchyme, these tissues develop into connective tissues, fascia, tendons, adipose tissue, muscles, nerve sheaths, and vessel walls. Tumors arising from these structures in the body organs are not discussed, for such tumors are managed as diseases of the particular organs and are therefore considered as gastric lesions, colon lesions and so forth.

As is the case with other malignant diseases, the etiology of the soft tissue sarcoma is unknown. Certain conditions and agents are known to be associated with the appearance of malignant tumors. These conditions may be divided into internal and external stimuli. The soft somatic tissues do not appear to be greatly influenced by internal stimuli, such as hormone fluctuations, as are tissues of the thyroid, breast, ovary, prostate and uterus; nor are soft somatic tissues influenced by external stimuli or irritants as are the skin, the gastrointestinal tract, the genitourinary tract, and the respiratory tract. Trauma has often been associated with sarcomas arising from these tissues. Frequently, patients will give a history of having had trauma in an area preceding the development of a lesion there. Usually, however, trauma has not been great; moreover, had the area been normal, the trauma would probably not have been noticed. There have been reports of incidences of sarcomas arising in old war wounds. Also, epidermoid carcinomas are frequently found in burn scars of long standing; in fact, in the series reported here, a case of fibrosarcoma arising from an old burn scar was found. Cases of epidermoid carcinomas arising after irradiation have been well documented. Likewise, fibrosarcomas have arisen after heavy irradiation. However, soft tissues are not subjected to as many internal and external stimuli as are other body tissues; perhaps this factor contributes to the low incidence of soft tissue sarcomas. At The University of Texas M.D. Anderson Hospital and Tumor Institute, approxi-

\*Presented by Dr. Richard G. Martin before the General Session of the Arkansas Medical Society April 22, 1963.

mately 1.6 per cent of all cases of malignant disease arise from the soft somatic tissues. This low incidence teamed with the harmless appearance of the lesion, may account for the frequent mismanagement of this form of malignant condition.

In contrast to lesions arising in the skin, breast, or body organs, the soft somatic tumors do not usually give characteristic symptoms. Frequently, no symptoms are noted other than a small nodule or lump in the area involved. Often this lump is very small, and in the early stages it is usually movable. Unless a soft tissue sarcoma arises from an area where there is little room for expansion without the lesion's compressing a nerve, pain is generally not an early symptom. An example of such an area would be the interosseous membrane of the forearm or leg. Pain may also be an early symptom of those lesions arising within the fibrous sheaths of nerves, and here, also, the pain results principally from compression of the nerve.

Unlike more common malignant conditions, such as those of the gastro-intestinal tract, breast, genitourinary system and respiratory system, soft tissue sarcomas are seen in all age groups from birth through old age. Table I shows that in this series, the majority of the patients with soft tissue sarcoma were within the age range of 20 to 69 years. However, there is a significant number of cases in the age group of zero to four years. It is interesting to note that sarcomas in the zero-to-four-year age group comprise a large portion of the malignant lesions seen in children, their number following closely behind those of lesions

	Tz	ABLE I	
SOFT TISSUE	TUMORS	BY AGE AND SE	EX 1944-1962
AGE	MALE	FEMALE	TOTAL
0-4	12	10	22
5-9	5	5	10
10-14	4	7	11
15-19	9	8	17
20-29	19	23	42
30-39	22	27	49
40-49	31	31	62
50-59	40	17	58
60-69	27	22	49
70+	15	15	30
TOTAL	184	165	349

arising from the nervous tissue, Wilms's tumors, and leukemias. The soft tissue tumor most frequently arising in children is probably the rhabdomyosarcoma, and the most common site is the head and neck area. Soft tissue sarcomas have been observed in children at the time of birth. Following adequate treatment, these patients usually respond well. Throughout all age groups, there seems to be little difference between incidence of soft tissue tumor in the male or female patient.

In the series of 349 cases seen at The University of Texas M.D. Anderson Hospital and Tumor Institute, the most common anatomical site was the lower extremity (Table II). Following in order of frequency are the upper extremities,

#### TABLE II SOFT TISSUE TUMORS, 1944-1962 ANATOMIC SITE

HEAD and NECK	
TRUNK	84
RETROPERITONEAL SARCOMALOWER EXTREMITIES	
_	
TOTAL	349

trunk, head and neck, and retroperitoneal area. The classification of these lesions according to origin is shown in Table III. It will be noted that in this series the fibrosarcomas are much more common than are other types of tumor. The second most common group includes the unclassified

#### TABLE III SOFT TISSUE TUMORS, 1944-1962 HISTOLOGIC TYPE

FIBROSARCOMA	177
UNCLASSIFIED SARCOMA	
LIPOSARCOMA	36
RHABDOMYOSARCOMA	22
SYNOVIAL SARCOMA	16
ANGIOSARCOMA	
MYXOSARCOMA	
LEIOMYGSARCOMA	5
_	
TOTAL	349

sarcomas. In most series of soft tissue tumors which have been reported, this unclassified group is prominent, for, frequently, classification of these tumors is impossible. The origin of some of these tumors may be diagnosed by the use of special stains and tissue culture techniques, and, wherever possible, this should be accomplished. However, it must be remembered that in examining a large tumor, several different classifications may be obtained as a result of the multiple patterns appearing in a single tumor. The difficulty

that pathologists have in classifying these tumors may, at first, be disturbing to the clinician. However, since the treatment does not vary greatly from one type of soft tissue tumor to another, the important factor to be determined is not the type of tumor, but whether the lesion is benign or malignant.

As previously stated, soft tissue sarcomas frequently arise as innocuous-appearing nodules in either the superficial or deep tissues. By the time they are first noted, those sarcomas which arise in the muscles or connective tissues have usually penetrated much deeper than those which grow in superficial tissue. These deeper tumors usually are not painful unless they are located close to a nerve or a nerve is involved in the lesion. On palpation, these lesions may be soft or hard. They may be movable or fixed. Usually, the more movable a tumor is, the better are chances for surgical removal without amputation. These lesions may become quite large without any evidence of metastasis. Metastasis usually occurs by way of the blood stream, and, therefore, involves the lung, liver, and bone; the lung is the most prominent site for metastasis. Approximately 6 per cent of the advanced cases show lymph node metastasis. The tumor types most likely to metastasize to the lymph nodes are the synovial sarcoma and the alveolar type rhabdomyosarcoma. Frequently, soft tissue sarcomas appear to be well encapsulated. The exception to this rule is the desmoid type of lesion-a very low grade fibrosarcoma which tends to spread along tissue plains. Although distant metastases are extremely rare in this group, they are very hard to eradicate because their spread is diffuse. When the soft tissue tumors are enucleated, local recurrence is the rule. Microscopic study of the pseudocapsule and surrounding normal tissue makes it strikingly evident that there are strands and false planes which make complete removal by enucleation impossible, and that wide excision must be performed. If not treated, these large lesions may ulcerate, become infected, hemorrhage, and cause marked pain and debilitation. A limb may become useless and the patient must often be confined to bed.

Generally these lesions are not radiosensitive. Although there have been numerous reports that the liposarcomas and some of the rhabdomyosarcomas are radiosensitive, the experience at the M. D. Anderson Hospital and Tumor Institute

has not borne out these findings.

As a form of treatment for soft tissue tumors, chemotherapy is still in the experimental stage. Objective regression has occurred in approximately one fourth of the patients treated by this method. Lesions of the lower and upper extremities lend themselves well to regional perfusion and infusion; however, following such treatment amputation has been necessary in some patients. In a few instances, large lesions have regressed sufficiently enough to allow less radical surgical procedures to be performed. It must be recognized, however, that until a better chemotherapeutic agent has been found, the benefits from chemotherapy will be short-lived.

Keeping in mind the nature of the pseudocapsule and the routes of metastasis, how best could these lesions be treated? At the time that they were first seen, 86 per cent of the patients in this series had localized disease. Therefore, it should be possible to eradicate the primary lesion and, in many cases, to do so before metastasis has occurred. A discouraging note is that 82 per cent of the patients seen at The University of Texas M. D. Anderson Hospital and Tumor Institute have had surgical procedures— usually local excision-before being referred. Because of the high recurrence rate of the primary lesion, a small scar in an area where a previous lesion had been reported is widely excised. In one third of these cases, microscopic foci of disease have been present in the excised scar. When a patient first comes to M. D. Anderson Hospital, a complete medical history and a physical examination including a chest x-ray film are obtained. Biopsies are performed for all lesions at the time definitive treatment is to be given. An open or excisional biopsy followed by frozen section is preferable. If a diagnosis can not definitely be made by frozen section, definitive treatment may be postponed; however, the period of postponement should not be more than 24 to 48 hours. Needle or aspiration biopsies are not routinely used because the nature of the procedure is usually radical and the pathologist must have adequate material for study. As previously stated, the pathologist is frequently unable to give a definite classification, although there is usually little doubt as to whether a specimen is benign or malignant. If at all possible, these biopsies are performed with the use of a tourniquet; then, if necessary, amputation is performed above the tourniquet. Fortunately,

the majority of these tumors arise in the extremities where radical surgical excision is possible. The nature of the excision will depend upon whether the lesion is superficial or deep, and in which area of the body the lesion is located. Superficial lesions can usually be widely excised, although at times the removal of a rib or skin grafting may be necessary. Should a lesion arise in a large muscle bundle such as the deltoid muscle, the gluteus maximus muscle, or the quadriceps muscles, the entire muscle bundle may be excised from origin to insertion, thereby both removing the lesion adequately and preventing amputation. Such procedures are excellent if the lesion has not eroded bone or does not involve or surround the major arteries and nerves to the extremities. Lesions that are large or which are located near or involve a joint do not lend themselves well to en bloc dissection; therefore, amputation becomes necessary. Simple amputation is preferred; however, the amputation site must be above the origin or insertion of the involved muscle. For example, a lesion between the knee and ankle requires an above-the-knee amputation; lesions in the thigh require disarticulation; lesions that involve the hip joint or the shoulder joint require more radical procedures such as intrascapulothoracic amputation and either modified or full hemipelvectomy. Usually these procedures are not used for patients having metastasis other than regional lymph node involvement in which the lymph nodes can be removed at the time of amputation. Soft tissue tumors arising in the head and neck area and in the trunk are difficult to eradicate with wide radical excision. Such lesions have a high local recurrence rate and, frequently, can not be eradicated by any method. Tumors arising in the retroperitoneal area are an interesting group composed mainly of liposarcomas, leiomyosarcomas, and an occasional fibrosarcoma. Because of their location, it is almost impossible to adequately remove such lesions. Patients with liposarcomas have been known to survive 10 or more years with slowly growing, recurrent lesions. Patients with such lesions usually expire from complications resulting from intestinal obstruction.

In this series, the recurrence rate was approximately 70 per cent for patients on whom local excision was performed; in patients in whom the lesions had been adequately excised, the recurrence rate was only 10 per cent. The 10 per cent of the

patients showing local recurrence were those in whom the lesions were located in the head and neck, retroperitoneal, or trunk areas of the body where radical excision are impossible. In patients having large, far advanced lesions and pulmonary or distant metastasis, amputations or excisions of the primary lesions are occasionally performed. In these instances, the patient must have been bedridden with pain, fever, and/or hemorrhaging from the lesion. Once amputation has been performed, such patients usually are able to be up, free of fever and the necessity of narcotics. Also, pulmonary resections for metastasis have been carried out; however, a waiting period of one or two months is advisable in order to allow time to observe the lesion and to obtain tomograms. If the lesion is solitary, which is rare in this type of malignant condition, then the metastatic lesion may be excised. If the metastases are multiple but confined to one lobe or one lung, they may be excised. Surgical resection is useless for bilateral pulmonary metastasis, unless the metastasis is limited to only one or two nodules on each side.

A follow-up program is important to patients with soft somatic tumors. During the first year, the patients should be seen at least every three

months; after the first year, patients should be seen every six months. Follow-up examinations should consist of a thorough physical examination including a chest x-ray and, if pain has developed, bone x-rays.

The five-year survival rate for this series was approximately 50.7 per cent. This survival rate is not high considering that the most common lesion seen was fibrosarcoma and, included in this group, were the desmoid and dermatofibrosarcoma protuberans lesions—two lesions frequently not considered malignant because metastasis from them rarely if ever occurs.

#### Summary

When first noted, tumors arising from soft somatic tissues of the body appear benign. This false appearance plus a pseudocapsule often lead to inadequate excision and, therefore, a 70 per cent recurrence rate. X-ray therapy has little to offer in controlling the disease, and chemotherapy is still in the experimental stage. Surgical therapy is the treatment of choice, even though radical amputations may be necessary to perform adequate excision. When tumor is adequately excised, the primary recurrence rate falls to around 10 per cent.



## "Pituitary Reserve" in Myxedema and Thyrotoxicosis

J. Kowal and L. J. Soffer, Ann Intern Med 59:79 (July) 1963

A group of 21 patients with thyrotoxicosis or myxedema was studied to determine whether the altered adrenal function described in these states resulted in decreased "pituitary reserve." Measurement of the urinary excretion of 17-hydroxycorticoids and 17-ketosteroids before and after the administration of metyrapone (Metopirone), an 11-beta hydroxylase inhibitor, failed to reveal any abnormality in response to the drug. Thyrotoxic patients with an increased turnover of adrenal corticoids had enhanced responses to metyrapone. The response of the patients with myxedema was similarly not affected by their low baseline levels. Although more prolonged studies may reveal a defect in pituitary-adrenal reserve, it is evident from the patients studied that a subnormal response to metyrapone in a patient with myxedema strongly suggests a primary pituitary disorder.

## A CRITIQUE

## The Role of Fluoride in Public Health\*

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Reviewed by Marion Brown, D.D.S.

This book has been prepared for people who have reason to be concerned in the fluoridation of water. Publications have been selected from a large volume of literature on the basis of providing information on the soundness of fluoridation, and of their usefulness to community leaders and others who have the responsibility of public water supplies.

No element which occurs naturally in the environment of man, and therefore in trace amounts in his tissues, has had so much attention in the scientific and in the popular literature in the past thirty years as has fluorine.

As space is limited, I shall confine my remarks to factual statements from the book. Controversies have been many, but the remarks I shall make have been proven by tireless research to be true. The following may help you answer some questions that might arise if your community is considering fluoridation of its drinking water.

#### Occurrence of Fluoride in Nature

Fluorine, ranking seventeenth in abundance among almost one hundred known elements, is widely distributed in nature. Its occurrence in living tissue, which properly includes plants and all lower organisms, represents its uptake from some source, and its absorption, utilization, storage and elimination by living organisms.

Signs of dental fluorosis are beginning to show in Europeans who had earlier obtained their domestic water supply from rain water and rivers.

The addition of fluoride in waterworks practice was begun in 1945. However, natural fluoridation has been going on in varying degrees in various parts of the world ever since the congealed rocks were sufficiently cooled to permit the condensed vapors of the atmosphere to run over or through them. The same process goes on now. Fluoride exist in ALL waters from minute to very high concentrations. One part per million is con-

sidered optimum to help prevent dental caries. The town of Climax, Colorado has 35 ppm.

At the degree of dilution found in natural or artificial fluoridation, the fluoride ion is free and it does not matter if it originally came from a calcium fluoride complex in some rock or has been added as sodium fluoride or sodium silicofluoride at a waterworks.

Intentional poisoning of the population is impossible. It would require more than 4 tons per million imperial gallons of water to make people sick, but not kill them. At a pumpage rate of seven million gallons a day, in excess of 28 tons per day for several days would be required.

#### Metabolism of Fluoride in Animals

The fluoride content of cow's milk averages 0.05 to 0.25 ppm. Relatively large quantities of fluoride ingested by the cow in the diet or drinking water will cause only a very slight increase in the quantity of fluoride in her milk.

Rats have been fed sodium fluoride in water and food and observed over long periods of time. There is no difference in whether food or water is the source.

Fluoride in quantities beyond any amount found in natural drinking waters does not alter the enzymatic activity of saliva or human prostate.

Injected fluoride was found to be rapidly removed from the blood and through the kidney of dogs.

Fluoride was found to be cleared through the kidneys of man more rapidly than chloride ions.

#### Metabolism of Fluoride in Man

No correlation was found between the fluoride content of the thyroid, its iodine content, basal metabolic rate, and the fluoride content of drinking water.

No cases of generalized skeletal sclerosis were observed in 86 inhabitants of Kempton, Ill. (7½ to 71 years of age) where the fluoride content of the drinking water was 3 ppm. No bone abnormalities or increased fractures, disorders of

<sup>\*</sup>The Kettering Laboratory in the Department of Preventive Medicine and Industrial Health, College of Medicine, University of Cincinnati, Cincinnati, Ohio, 1963.

kidney function, or any other abnormalities other than mottling of dental enamel were found in studies where water naturally contained 6 ppm.

Fluoridation of water and its relation to cancer: A study of inhabitants of Grand Rapids, Michigan actually show a decrease in death rate due to cancer. It was erroneously claimed by the foes of fluoridation that the reverse was true.

At Scott and White Clinic, Temple, Texas extensive medical examinations failed to show any difference in the general health of inhabitants of fluoride deficient waters and in fluoride content where the optimum amount was far exceeded.

Osteoporosis definitely is NOT caused by fluorides.

The availability of radioactive iodine has provided a precise test for the measurement of the function of the thyroid gland. The ingestion of water at 1 ppm of fluoride does not affect iodine uptake of the thyroid. In fact human subjects ingesting 2½ times the optimum of 1 ppm show normal ranges of protein-bound iodine.

Studies reveal that within one week after the start of fluoridation the amount of fluoride eliminated in the urine of adults equals the concentration in the drinking water. The period of adjustment for children was considerably longer.

There is no relationship between the incidence of mongolism and the ingestion of fluoride-bearing water.

Fluoridation of the drinking water up to 1 ppm does not enable bone to accumulate fluoride to the critical level beyond which skeletal fluorosis may be expected.

There is no relation between the various forms of arthritis and the ingestion of fluoridated water.

The fluoride content of urinary calculi is relatively high and does not differ significantly in low or high fluoride areas.

Very low concentrations of fluoride occur in biliary calculi: 0 to 60 ppm in an area where the fluoride content of water is 2.6 ppm.

The consumption of water with a fluoride content of 0.7 ppm or more has not in any way affected the mortality rates in the United States.

Low sodium diets are not affected significantly by the ingestion of fluoridated waters. Drinking water of 1.2 ppm would only add 1 to 2.5 mg, of sodium per day. This is insignificant since these patients are usually allowed 250 mg, to 500 mg, per day.

The ingestion of water containing fluoride up to 4 ppm does not cause an accumulation of fluoride in soft tissue. The higher concentrations of fluoride in the aorta are not correlated with waterborne fluoride; they increase with age and may be associated with increasing calcification in the aorta with advancing age.

Fluoride does not accumulate in placenta, pituitary, thyroid or mammary glands. Sudden increases of fluoride in the maternal blood cannot produce high levels in fetal blood.

The international Association for Dental Research feels that such a scientifically sound program as fluoridation of the public water supply ought to be instituted speedily by all communities that have not yet done so.

#### Fluoride and Dental Health

The study of mottled enamel, a lesion long recognized in Colorado Springs, originated as a research project in dental science in 1908. The association of drinking water from deep wells with mottled enamel soon became established. The specific substance causing it did not become known until 1931 when Churchill, chief chemist of the Aluminum Company of America, found fluoride, then considered an unusual constituent of water, in the deep well water of Bauxite, Arkansas.

I shall not bore you with the long history of how it was finally proved that the fluoride ion definitely inhibited dental caries—probably mans most prevalent disease.

The following statements are only a few that might help you answer questions that might arise:

Illinois selective service inductees during World War Il definitely showed a lesser incidence of dental caries if they were from fluoride areas.

Inhibition of dental caries obtained from the ingestion of fluoride during the years of calcification and eruption of the permanent teeth will persist only if exposure to fluoride is renewed periodically or continuously after the eruption of permanent teeth.

There is evidence of the persistence of cariesprevention action of fluoride-bearing water into adulthood.

Studies in New York State reveal that children in the four study areas showed a 48 to 70% reduction in the decayed, missing, and filled (DMF) rates. Evidence indicates that there is less malocclusion among children in fluoridaded areas.

Water is definitely the most desirable vehicle for supplementing the Huoride intake.

Topical applications of sodium fluoride to teeth of 1,032 children showed a 40% reduction in dental caries.

In some cases, fluoride supplements for young children are advisable. They should be on written prescription only and should be prescribed only when the drinking water contains less than 0.7 ppm. They should be available at least until age ten. Not more than 264 mg, should be dispensed at one time. The use of bottled water containing 1 ppm is suggested as most feasible during the first two years of life.

There is no relation between waterborne fluoride and incidence of gingivitis or of other periodontal disease.

#### **Legal Aspects**

This is perhaps boring to most physicians and dentists. It is now a settled principle of law that a community has the inherent right to fluoridate the public water supply.

Any additional data may be obtained by writing the American Dental Association.

The book deals with Sociologic and Community aspects. The opponents of fluoridation have made many claims. All have actually been refuted by careful study and research. It does quote President Kennedy as stating early in 1961 that he authorized his personal physician, Janet Tratell, to issue a statement that he and his family drink the regularly supplied water of Washington, which is fluoridated in accordance with the recommendations of the Public Health Service.

#### **Engineering and Practical Aspects**

All reports are favorable. If interested, the book does contain several factual and helpful suggestions and references.



#### The Urine Sediment in Acute Appendicitis

L. H. Kretchmar and D. F. McDonald, Arch Surg 87:209 (Aug) 1963

Patients undergoing appendectomy for acute appendicitis at Strong Memorial Hospital, in 1959, were evaluated in regard to the admission urinalysis, sex, age, duration of symptoms, fever, leukocyte count, and the findings at surgery. The presence of a positive urine sediment was variable and of little prognostic value. Microscopic pyuria was found in  $18\frac{67}{10}$  of the patients without a previous history of urinary tract disease. Five per cent had also microscopic hematuria. There was a higher incidence of positive urine specimens in patients over the age of 40. Patients with an abnormally positioned appendix may be more likely to develop microscopic pyuria or hematuria in the presence of acute appendicitis because of the close relationship to the bladder or right ureter. Serious consideration should be given to a diganosis of urinary tract pathology in patients with questionable signs of

acute appendicitis, if unusually large numbers of cells are found on urinalysis.

#### Peptic Ulcer in Africa

C. A. Snyder and M. J. Alexander, *Arch Surg* 87: 206 (Aug) 1963

Peptic ulcer is not a disease limited to highly developed areas. There are localized geographical areas in Southern Nigeria, South India, and Ethiopia where peptic ulcer is common. An additional report of 30 surgical cases of peptic ulcer operated upon in Ruanda-Urundi (eastern Africa), where obstruction from duodenal ulcer is extremely common, is presented. The origin of ulcer among these people is thought to be dietary, but it is also shown that anxiety is prominent among Africans. The possible role of heredity is suggested. Further research into the etiology of peptic ulcer in these limited geographical areas could shed much light upon the pathogenesis of this disease.

### TEACHING SEMINAR

University of Arkansas Medical Center Little Rock, Arkansas



## The Pathogenesis of Thromboembolic Pulmonary Arteriosclerosis

## A Review of Clinical and Experimental Studies

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Dulmonary thromboembolism is an event which is encountered almost daily in the practices of many physicians. In its most commonly recognized form it may present as a dramatic episode in the clinical course of many cardiovascular diseases as well as in the post-operative state, frequently with catastrophic results well recognized by everyone. However, the fact has been less well appreciated that probably the great majority of thromboemboli are not clinically recognized. Many of these apparently do not result in clinical signs and symptoms and are rapidly lysed. thereby being removed from the lesser circulation. During the past fifteen years it has been increasingly noted that recurrent episodes of pulmonary thromboembolism may occur and result in severe changes in the pulmonary circulation with attendant cor pulmonale and its many sequelae. At the same time there has been a marked upsurge in interest in the human pulmonary circulation because of the development to a high degree of techniques for cardiac surgery permitting the correction of some types of congenital and acquired heart disease. The recent monograph by Harris and Heath (23) as well as the presentation of symposia on the pulmonary circulation are valuable by-products engendered by this rela-

tively new interest in a very important portion of the cardiovascular system.

There has also been a tremendous interest in the pathogenesis of arteriosclerosis, particularly coronary atherosclerosis. The whole problem has been a fertile and exciting area for the internist, biochemist, nutritionist, epidemiologist and pathologist. Because of ready access to the lesser circulation via intravenous injection, the pulmonary vessels have provided a ready experimental model in which to study some aspects of the arteriosclerotic process.

It shall be the purpose of this review to discuss something of the pathogenesis of pulmonary vascular disease as it relates to embolism and arteriosclerosis. Relatively little will be said about pulmonary vascular lesions in congenital heart disease as this is a very large problem in itself. Also the problem of primary pulmonary hypertension will receive little consideration. The latter disease is considered an entity certainly, but many of the early cases of primary pulmonary hypertension appear now to represent severe thromboembolic pulmonary arteriosclerosis. Indeed, as has been pointed out (23), it frequently is impossible to determine any difference between the two entities on a histopathologic basis. Much of the work cited will be of an experimental

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nature. This is because experimental models are readily available, much experimental work has been performed and many features are analogous to results noted in man. These in some instances serve to elucidate some aspects of the human disease.

#### **Clinical Aspects**

Pulmonary embolisiu, from whatever cause, is an extremely common finding in any autopsy series. Estimates of incidence have ranged from 5 to 14 per cent in a general autopsy series up to 48 per cent in patients dying with congestive heart failure. Also pulmonary infarction has been said to occur in 50 to 60 per cent of cases with embolism. It is also well recognized that the frequency of infarction increases greatly in patients with congestive heart failure. In one postmortem study approximately 90 per cent of such patients with emboli also had pulmonary infarcts (46). In general it may be said that chronic pulmonary congestion predisposes to infarction if embolism occurs, whereas in the otherwise normal lung embolism does not result in infarction.

Most pulmonary emboli originate in leg veins and represent detached portions of thrombus. It has been estimated that approximately 60 per cent of emboli originate in leg veins, 24 per cent originate in the right side of the heart, and 15 per cent originate in the pelvis, particularly in the periprostatic venous plexus. Thrombi from the upper extremities are quite rare, as are other nonthrombotic emboli such as fat, bone spicules, organ fragments and amniotic fluid (46).

Physiologic and clinical aspects of pulmonary embolism and infarction, including therapy, were well reviewed by Parker and Smith, (46) and the interested reader is referred to their paper for futher information.

Recurrent pulmonary embolism may result in such severe obstruction to blood flow through the lung that chronic cor pulmonale develops. Meneely (37) presented an interesting historical tabulation of observations on heart disease secondary to pulmonary disease. Altschule (1) recently reviewed the physiologic changes in cor pulmonale and has pointed out that, contrary to the widespread view, the disease results not only in strain on the right ventricle, but also in increased work of both ventricles. Hypoxia increases the output of both ventricles, but it also results in pulmonary vasoconstriction with addi-

tional right ventricular burden. Hypercapuea also increases cardiac output and affects the ventricles equally. Another phenomenon which occurs when emboli lodge in pulmonary arteries is marked hypertrophy of the normally occurring precapillary pulmonary and bronchial arterial anastomoses. The precise reason for this is not well understood, but the functional result is a left to right shunt in the fungs, the increased flow enters the pulmonary veins and left ventricular work can increase by as much as one-third (1, 7, 46). Indeed, the gradual total occlusion of the main pulmonary artery can result in such marked development of the collateral bronchial circulation that no infarct develops at all (36).

Massive pulmonary embolism is generally rapidly fatal and even if emboli are somewhat smaller so that they lodge in large elastic lobar arteries rapid death may result from acute cor pulmonale. However, frequently there is survival for a considerable period of time with the development of infarcts. A number of series of cases involving chronic obstruction of large branches of the pulmonary artery have been reported (8, 10, 31, 36). Kampmeier (31) collected 23 cases from the literature and added one of his own. He noted that atheromatosis of the pulmonary artery, followed by thrombosis, was present in 11 of the 24 cases and that 5 cases were the proven result of embolism from a distant thrombotic site. Belt (8) in his 4 cases noted that organizing emboli may result in cicatricial stenosis of arteries and then these areas may be subject to secondary thrombosis. Carroll (10) presented 5 cases of massive thrombosis of pulmonary arteries and cor pulmonale. Two of these subjected to cardiac catheterization showed increased pulmonary arterial pressure and low cardiac output.

More frequent survivors of pulmonary embolism than the cases just cited are those individuals in which the lungs are subjected to repeated showers of small thromboemboli. Many of these episodes may be completely silent and presumably in many instances the emboli are lysed and leave no demonstrable residue. On the basis of experimental observations it seems probable that one of the heretofor unrecognized functions of the pulmonary vasculature is the filtering of particulate matter from the circulation, with subsequent disposal. O'Neal and co-workers (58) have injected rabbits intravenously with fibrin clotemboli and sacrificed them at 4, 24, 48 and 72

hours after injection. The emboli in the lungs. were counted, classified and compared with emboli in the lungs of rabbits dying immediately after injection. It was found that approximately 90 per cent of the emboli disappeared during the first 4 hours and that 94 per cent of the remaining clots showed definite evidence of organization (appearance of fibroblasts in clot) at 24 hours. Thus it would appear that the fibrinolytic activity of lung may be very great. Wartman, Hudson and Jennings (64) injected emboli of filter paper fibers (cotton) into rabbits and found that frequently the fibers passed completely through the vessel wall to lie in the adventitia or perivascular lung space. In these instances the vessels did not appear to be permanently damaged to a significant degree.

Many interesting cases of recurrent pulmonary embolism have been reported (11, 33, 35, 45, 48). Owen et al (45) reported 12 cases of the disease with subsequent cor pulmonale from 8000 autopsies at the Massachusetts General Hospital over a 20 year period. This incidence suggests an extremely rare condition; however they emphasized that they were illustrating the syndrome in its "purest" form and consequently many cases of pulmonary embolization associated with other diseases were omitted. The clinical features were strikingly few and almost all related to the effects of pulmonary hypertension. Cough and dyspneawere the most frequent symptoms noted, and the dyspnea became progressively worse over the months preceding admission. Cyanosis was a fairly constant physical finding. Pleuritic pain and hemotysis were distinctly unusual and progressive right heart failure developed in all cases with the typical attendant signs of pulsating neck veins, hepatomegaly and ankle edema. The radiologic examination of the chest showed right ventricular enlargement, prominence of the pulmonary arterial trunks in the hilus, with rather clear peripheral lung fields and infrequent evidence of infarcts. Electrocardiograms showed right ventricular hypertrophy. Other writers described prominent P waves indicative of right atrial enlargement (23).

Harris and Heath (23) pointed out that all the above-cited features are identical with those seen in primary pulmonary hypertension. They emphasize that in the absence of an obvious source of emboli the clinical differentiation between the two diseases is impossible, and they are "doubt-

ful whether there is any distinction even on histological examination." They go on to point out that an awareness of the dilemma is important because the diagnosis of primary pulmonary hypertension is essentially a death sentence whereas the treatment of recurrent pulmonary embolism may be advantageous. Because of this they believe that all patients presenting this syndrome should receive anticoagulant therapy.

The pathologic features of recurrent pulmonary embolism as they appear in human material should be reviewed. The right ventricles generally are moderately to markedly hypertrophied and dilatated and the right atrium is dilatated. The left atrium and ventricle are generally neither dilated nor hypertrophied. The pulmonary abnormalities involve principally the vascular tree. In the larger tertiary arteries there is frequent organization of emboli by fibroblastic invasion of the thrombus from the vessel wall. In many of these fresh thrombi and emboli are superimposed. In smaller vessels of from less than 1 to a few mm. usually the embolus is completely replaced by fibrous and elastic tissue. These frequently contain many small, delicate vessels and recanalization is generally present. The organized thrombus eventually may be incorporated into the vessel wall as a fibro-hyaline thickening indistinguishable from a typical arteriosclerotic lesion (45). Castleman and Bland (11) demonstrated in their case of organized emboli of the tertiary arteries that severe atherosclerosis of the pulmonary arteries occurred proximal to the embolic obstruction, but that distal to the lesion, the vessels were uninvolved. This difference was attributed to the effects of severe pulmonary hypertension on the proximal vessel wall.

Korn et al (33) have recently reported 52 cases in which extensive pulmonary intra-arterial bands and webs were present. They point out that this phenomenon is not uncommon but that frequently these lesions have been misinterpreted or overlooked because of ignorance of their existence. They have shown rather clearly that these bands and webs represent organized pulmonary emboli which after lodgement propagate distally and attach in another portion of the vascular tree. There is frequent accumulation of more thrombus on these lesions by accretion with resultant frequent changes in the form and size of the lesions. In their 52 cases 8 patients died of acute pulmonary embolism, 5 died of chronic cor pulmonale

secondary to embolism and in 5 others cor pulmonale was present but was not considered a cause of death. Their study substantiates what has been previously mentioned concerning multiplicity of embolic episodes, clinical nonrecognition of the episodes, infrequency of infarcts and leg vein thrombi as the common source of emboli.

O'Neal, Thomas and associates (32,44,59) have done some of the most extensive work regarding the genesis of pulmonary arteriosclerosis in a variety of human diseases, and in relating these findings to experimental work and to arteriosclerosis in general. In a series of 86 patients with mitral stenosis (59) about 40 per cent had moderate to marked arteriosclerosis in the small pulmonary arteries but none of the controls had more than slight pulmonary arteviosclerosis. They could find no significant correlation between the degree of arteriosclerosis and right ventricular hypertrophy. This would suggest that pulmonary hypertension was not important in the development of arteriosclerosis in those patients. However, there was a highly significant correlation (p<0.01) between thromboembolic phenomena and moderate and advanced arteriosclerosis. Likewise, in a similar study of 125 patients with chronic pulmonary emphysema (32) there was no significant correlation between pulmonary arteriosclerosis and right ventricular hypertrophy or between pulmonary thromboemboli and right ventricular hypertrophy. There was again a significant correlation between advanced arteriosclerosis and thromboembolic phenomena.

O'Neal and Thomas (44) also examined 59 cases of congenital heart disease with anomalies leading to a left to right shunt, 31 cases with pulmonary stenosis and septal defect (mostly tetralogy of Fallot) and 39 normal controls in an attempt to evaluate the various roles of pulmonary hypertension, increased blood flow rate and thromboembolism on the production of pulmonary arteriosclerosis. They found that pulmonary arteriosclerosis was very frequent in congenital heart disease whether there was a left to right shunt or pulmonary stenosis present. Arterial thrombi were found with approximately the same frequency in the two groups and there was a 70 per cent association of thrombi and arteriosclerosis regardless of the type of anomaly present. Furthermore, they presented a series of lesions which served to show the sequence of changes in the transformation of a thrombus to an ateriosclerotic plaque. They did note, however, that in cases with a left to right shunt the arteriosclerotic lesions were more severe than in pulmonary stenosis and postulated that pulmonary hypertension and increased blood flow may augment the severity of the arteriosclerosis.

Naeye (41) has recently studied 69 infants less than 5 months old at the time of death. These cases all had direct shunts between the greater and lesser circulations and the pulmonary arteries were subjected to hypertension, increased blood flow and occasionally hypoxemia and polycythemia. Pulmonary arterial thrombi appeared soon after birth, increased in frequency with age and transitional stages between these thrombi and intimal proliferative lesions could be seen. Another group of 39 infants with pulmonary hypertension and polycythemia secondary to sustained hypoxemia was studied. None of these had cardiac anomalies or increased blood flow. None of these infants or the 65 nonhypoxemic infants in the control group showed pulmonary arterial thromboses or proliferative arteriosclerotic lesions. It was concluded that pulmonary arterial thrombosis was the major factor in the development of early arteriosclerotic lesions in congenital heart disease and that the lesions were most likely to develop when pulmonary hypertension, increased blood flow, hypoxemia and polycythemia act together.

These findings in congenital heart disease are of particular interest because of some of the controversy which has developed as to the significance of some types of peculiar "plexiform" lesions seen in some patients. Plexiform structures are lesions which are occasionally found in adults with severe "primary" pulmonary hypertension and in some varieties of congenital heart disease. The lesions occur in small muscular arteries which apparently lose their media. The lumen is replaced by a vascular meshwork of plexiform channels which, as can be shown by serial microscopic sections, enter dilated arterioles and finally drain into pulmonary capillaries. These structures significantly block pulmonary blood flow and it has been shown that the maximum obstruction to blood flow is often in the artery just proximal to the main plexiform mass. (42, 62).

Wagenvoort (62) in studying 10 cases with plexiform lesions found four cases with foci of healing arterial necrosis and some plexiform lesions apparently clearly arising from organized thrombi. He postulated that in severe pulmonary hypertension the muscular arteries go into severe spasm as they do in systemic malignant hypertension with necrosis, and subsequent thrombosis with distal arteriolar branches developing irreversible dilatation before total thrombolic occlusion of the vessel occurs. Subsequent recanalization might result in plexiform bodies. Naeye (42) also feels that there is more direct evidence in favor of thrombosis than for any other mechanism. This view is stoutly opposed by Moschcowitz, Rubin and Strauss (39) who feel that the lesions are congenital developmental defects because they are never observed in pulmonary hypertension associated with mitral stenosis and emphysema and are most frequently associated with congenital heart disease. Indeed, Rubin and Strauss (53) have reported somewhat similar occlusive vascular anomalies in the small pulmonary arteries of a stillborn infant and 4 infants dying in the neonatal period. All of these had severe multiple congenital anomalies but one had no cardiac anomaly or right ventricular hypertrophy. The true significance of these lesions remains to be seen. The very early appearance of pulmonary thrombosis in congenital cardiac disease (41) coupled with other observations (62) suggests that some varieties of the lesion do arise from recanalized thrombi whereas the association of these with other congenital anomalies as well as congenital heart disease in the neonatal period indicates a developmental defect.

Mention should be made of the relationship of thromboembolic pulmonary arteriosclerosis and the revival of the thrombotic theory of atherosclerosis by Duguid (14, 15). Rokitansky first proposed that atherosclerosis was a phenomenon secondary to the formation of mural thrombi on vascular intima. However, this suggestion was rapidly displaced by Virchow's theory that atherosclerosis was the result of a degeneration in the vessel wall. The latter theory was predominant for approximately one-hundred years until Duguid made a study of coronary and aortic thrombosis using fresh Irozen sections and fat stains. He found evidence that many of the lesions looked upon as atherosclerotic were, in fact, arterial thrombi which had been converted into fibrous thickenings; the red thrombi frequently underwent a softening and fatty change to yield typical atheromatous plaques. This finding was one of the major stimuli to the extensive study of experimental pulmonary thromboembolism, because injection of thrombi into the pulmonary circulation provided a ready method for studying the formation of such arteriosclerotic lesions.

Further mention should be made of primary pulmonary hypertension. As previously indicated, it is apparently an entity and it is stated that the earliest histologic change consists of thickening of the media in small arteries (52). Even if this is true, the lesions are soon complicated by intimal thickenings and thromboses. On examining photomicrographs from some of the cases (9, 13, 52) eccentric and concentric lesions resembling organizing thrombi are quite apparent. These closely resemble both the experimental lesions and those in obvious human thromboembolic arteriosclerosis.

## Experimental Production of Pulmonary Arteriosclerosis

As noted previously, much of the work relevant to experimental pulmonary arteriosclerosis was performed to study the underlying pathogenesis of the whole phenomenon of arteriosclerosis rather than to study pulmonary vascular disease per se. Reviews of many aspects of atherosclerosis are available. The study of lipid factors in atherosclerosis has been particularly alluring (16, 49, 54) and will be briefly touched on below.

The work can be separated into several aspects, all of which are inter-related. There has been work on fibrin and blood clot embolism, embolism of foreign substances such as gas emboli, cotton fibers and plastic beads, intravenous thromboplastin administration, and embolism by true thrombi. Also a fair amount of attention has been devoted to the arteritis which occurs in pulmonary embolism and to possible interference with nutrition of the blood vessel wall.

The rabbit has been used almost exclusively by many workers in this field since it is an especially convenient small animal for intravenous injection because of the ready access afforded by the marginal ear vein. It would seem that this animal was a valid choice for this particular problem, but as we shall see, it has probably been a poor and misleading choice to study lipid factors in atherosclerosis.

Harrison (24) in 1948 initiated the studies on experimental thromboembolic arteriosclerosis by repeatedly injecting fragmented human fibrin clots intravenously over a period of weeks into rabbits. He noted thickened proliferative fibrous fesions in the pulmonary arteries and speculated that the lesions of human primary pulmonary arteriosclerosis might be the result of healed pulmonary embolism.

Subsequently, many workers performed similar experiments (2-7, 18, 26, 30, 40, 63, 64, 65). They generally used autogenous blood clots or fibrin clots, injected them repeatedly and obtained much the same result as did Harrison. In other instances amniotic fluid or thromboplastin was injected instead of clots (3, 21, 26, 28, 29, 34), and again essentially similar results were obtained. As previously noted, repeated injections were necessary to obtain significant lesions because of the marked fibrinolytic activity of the lung (58). Very small fibrin emboli were rapidly lysed, but larger "worm clots" approximately 1 mm. in diameter were more frequently organized. Also clots which were allowed to form in isolated segments of ligated veins and age in vivo for 2-3 weeks before release into the circulation lysed more slowly than did fresh thrombi. This situation is somewhat more analogous to that seen in release of thrombi from leg veins and may possibly explain why they might tend to organize in the pulmonary arteries of some individuals.

One of the prominent findings of many workers has been the presence of acute pulmonary arteritis in vessels containing experimental librin or blood clot emboli (3, 30, 40, 47, 63). This consists of diffuse infiltration of the vessel wall by polymorphonuclear leukocytes, endothelial proliferation and in some instances arterial necrosis, followed by organization of the thrombus, fibrosis and/or hyalinization of the vessel. Several reasons for the inflammatory process have been advanced, among them immunologic hypersensitivity, sudden increases in pulmonary vascular pressure, interference with vascular nutrition and effects of breakdown products of organizing thrombi. It appears unlikely that the arteritis is the result of hypersensitivity because the phenomenon occurs using the animal's own clot and when thromboplastin is injected into rabbits, it usually has been obtained from rabbit brain. Also, sudden increases in pulmonary arterial pressure do not appear to be the cause as the lesions appear within 24 hours after administration and before there is anatomic evidence of pulmonary hypertension (47). Furthermore, injection of plastic beads into the circulation with production of hypertension fails to cause arteritis (47,61.) Inter-

ference with vessel nutrition was advanced by Barnard (5) and by Meyer (38) who saw the same picture in eleven cases of thromboembolism to large vessels in humans. Brenner, quoted by Meyer (38), states that the vasa vasora of the pulmonary artery penetrate to the outer one-third of the media and capillaries are present in the outer two-thirds. The inner portion of the media presumably obtains its nutritive requirements by perfusion from the lumen. However, if it is strictly true that nutritional interference is a factor, then one would expect to see arteritis when plastic beads are injected (61). There perhaps remains some factor emanating from the thrombus which damages the vessel wall. Filshie and Scott (17) studying the organization of thromboemboli in the intrahepatic radicals of the portal vein noted an inflammatory response in the vessels distal to some of the large occlusive thrombi. The inflammation was not apparent until organization had begun and was over by the time organization was through. They attributed the reaction to some liberated factor diffusing down the lumen of the vessel.

Gore and co-workers (19, 20, 21) have studied the acid mucopolysaccharides of the aorta and pulmonary vessels. These substances have anticoagulant activities and they observed that focal depletion of acid mucopolysaccharides in the intima occurred with many of the lesions of atherosclerosis. It was interred that this loss of anticoagulant activity in the vessel wall might partially explain the frequent occurrence of thrombosis in atherosclerosis. They then studied the pulmonary arteries in rabbits subjected to repeated intravenous injections of thromboplastin. It was noted in addition to the usual thrombotic and proliferative lesions that, concurrent with acute arteritis and reaching a peak in 3 weeks, the pulmonary arteries showed a considerable increase in acid mucopolysaccharide. They further showed that addition of thromboplastin to a solution of acid mucopolysaccharide in vitro resulted in formation of an insoluble complex. They postulated that the in vivo formation of this complex might elicit the inflammatory reaction and that the subsequent increase in arterial polysaccharide was a compensatory mechanism to make up for that lost by the reaction with thromboplastin. The same lindings have been noted following the administration of protamine (20), which is commonly

used as a precipitant for acid mucopolysaccharides.

One of the criticisms of the experimental work on pulmonary thromboembolism has been that the lesions produced are not atheromata, as are some of the lesions seen in many human pulmonary arteries, but are fibro-hyaline thickenings without increased lipid, or the tendency to calcify or ulcerate. Thomas et al (60) felt that this was simply due to lack of lipid in the normal rabbit diet and found that when rabbits receiving weekly intravenous injections of blood clot were given melted butter or oleomargarine the frequency and severity of lesions in these animals increased significantly. It was suggested that possibly the presence of fat increased the fibroblastic reaction in organizing thrombi or that fat might interfere with fibrinolysis or increase the coagulability of blood with extension of thromboemboli. A similar increase in severity of lesions was seen in rabbits injected with bloodclot and fed a cholesterol diet (27). It was further shown that pulmonary hypertension induced by plastic beads augmented experimental atherosclerosis in the cholesterol fed rabbit. Certainly it would appear that lipemia, and particularly the presence of saturated fatty acids has an effect on the speed with which blood clots (25, 49) but the answer in regard to the origin of lipid in atherosclerosis appears to lie elsewhere. O'Neal and Still (43) suggest that lipid-laden foam cells pass through the endothelium and accumulate in the subintimal tissues. They show electron micrographs of this occurring in the hypercholesteremic rabbit, but it seems unlikely that such is the situation in man. Prior et al (50) point out that the so-called atherosclerosis produced in the hypercholesteremic rabbit probably has no relationship to the human disease. They emphasize and illustrate beautifully the fact that these rabbits have what essentially amounts to a lipid storage disease and that there is a strong resemblance to the lesions seen in the storage of macromolecular substances such as the polyvinyl alcohols. The animals show necroses in the liver, adrenal cortex, reticuloendothelial reproductive and genitourinary systems. Although some of the vascular lesions show some resemblance to the lesions in human atherosclerosis the distribution of lesions is entirely different with the exception of the aorta. They conclude that except for lesions of foam cells in the choroid plexus, nothing analogous to these experimental

lesions occurs in man.

The work of Chandler and Hand (12, 22) has shed the most information on the origins of lipids in lesions of thromboembolic arteriosclerosis. They have pointed out that there is a profound difference between a thrombus and a blood clot or fibrin clot. A blood clot is a haphazard arrangement of erythrocytes and leucocytes entrapped in a fibrin mesh, whereas a thrombus has a definite layered structure with prominent lines of Zahn. It can be shown with the electron microscope that the large eosinophilic amorphous areas in a thrombus are closely packed masses of platelets. They have developed an in vitro method of producing a true thrombus which electronmicroscopically appears identical to a spontaneous in vivo thrombus. Using thrombi such as these, made either from human or rabbit blood, they have shown that lipid laden foam cells arise from monocytes of the thrombus after incubation for a few days at 37°C. The monocytes phagocytize lipid-rich platelets and are transformed into typical foam cells. They point out that platelets contain about 20 per cent lipid and that their cholesterol content correlates closely with the serum cholesterol level of the subject from which they are obtained. Erythrocytes, believed to be the source of atheromatous lipid by Duguid (14, 15), contain only about 1 per cent lipid. After this discovery, Chandler and Hand (22) again performed the typical experiment of intravenous injection of blood-products into rabbits, using the thrombi which had been formed by their in vitro technique. They produced typical fibrofatty atherosclerotic plaques containing foamy macrophages, calcification of unphagocytized platelets and eventually areas of boney metaplasia.

The role of plasma lipids and fibrinolysis is currently being extensively studied by Scott et al (55, 56, 57). A portion of their work consists of an in vitro study of clot-lysis times using the thromboelastograph. They have shown that an experimental butter-containing atherothrombogenic diet in the rat has an antilytic effect on clot-lysis. A similar effect was shown using equine platelets on clots made with a combination of rat whole plasma and human lyophilized plasma. It is postulated that the effect may be due to some of the heat-stabile constituents of platelets such as ethanolamine phosphatide. This antilytic effect of platelets is of interest in view of the demonstrated effectiveness of true thrombus in the pro-

duction of atherosclerosis as compared with the fibro-hyaline arteriosclerotic lesions produced by fibrin and simple blood clots.

The precise relationship of the vast amount of experimental work on pulmonary arteriosclerosis to human systemic arteriosclerosis is not known. It may be that pulmonary and systemic arteriosclerosis are pathogenetically different and that the relationship between them is not close. Much additional work is needed before the many facets of arteriosclerosis, both clinical and experimental, can be welded into a uniform structure which will explain the pathogenesis of this disease.

#### Summary

The syndrome of thromboembolic pulmonary arteriosclerosis with cor pulmonale in the human was reviewed and its close resemblance to primary pulmonary hypertension was emphasized. The origin of pulmonary arteriosclerosis in relation to thrombosis and embolism, including the origin of plexiform lesions, has been considered in mitral stenosis, chronic pulmonary emphysema and in congenital heart disease. It seems likely that the primary stimulus for pulmonary arteriosclerosis in these diseases in thromboembolic. The thrombogenic theory of atherosclerosis (Duguid) has been reviewed and clinical and experimental studies to support it have been noted.

From review of the experimental aspects of pulmonary thromboembolism it seems probable that a substance is released from the thrombus which combines with the acid mucopolysaccharide of the arterial wall resulting in damage to the artery with subsequent inflammatory reaction. During this process the thrombus is organized, lipid-laden macrophages appear as the result of phagocytosis of platelets by monocytes of the thrombus and possibly normal fibrinolysis is inhibited by the presence of a platelet phospholipid. The end result of this sequence is the organization of the thrombus with formation either of a fibrous intimal thickening or a lipid containing atheroma.

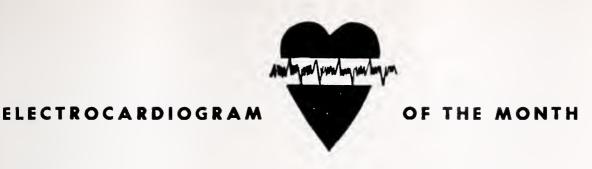
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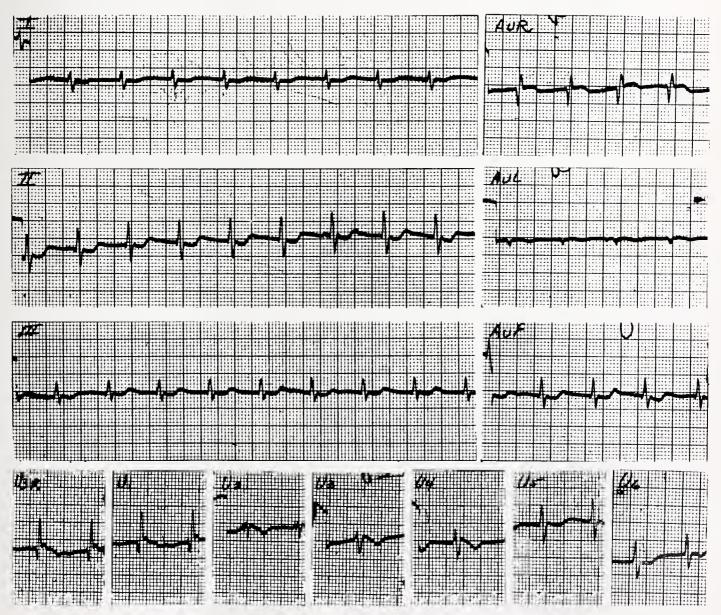
WHAT IS YOUR INTERPRETATION?

AGE: 48 SEX: M BUILD: SLENDER BLOOD PRESSURE 80/60

MEDICATION: None

HISTORY: 6 year history of progressive dyspnea.

#### Answer on page 270



The Department of Medicine, University of Arkansas Medical Center
\*James S. Taylor, M.D., Professor of Medicine

### WHAT IS YOUR DIAGNOSIS?

Prepared by the Department of Radiology, University of Arkansas School of Medicine, Little Rock

Answer on page 270



Case No. 2

No. 14-32-55 8 day old white female.

HISTORY: This child began vomiting bile stained material soon after birth and was unable to retain feedings.



### PUBLIC HEALTH AT A GLANCE

### **TETANUS**

Tetanus has been recognized by physicians as a distinct clinical entity for many centuries. It is notorious for its high mortality compared to its relatively low morbidity. In countries with inadequate medical care there is usually also poor reporting. Therefore statistics from one country are not comparable to those of others in many instances. Reported deaths are slightly better data for statistical comparison. Therefore, deaths reported to the Communicable Disease Control Division of the World Health Organization from selected countries are shown in Table 1.

Table 1. Tetanus Deaths-1961

United States	242
Kenya	385
France	352
El Salvador	524
Nicaragua	373
Venezuela	498
Japan	572
Philippines	981
Mexico (1959, latest year)	2498

Of the 379 cases in the United States in 1961, 242 died. Deaths from the 322 cases reported in 1962 are not available at this time. During 1963, 196 cases have been reported in the United States as of September 28. Arkansas contributed 13 of the cases in 1961 and 8 of the deaths, and 11 cases and 10 deaths in 1962. There have been 4 cases and 4 deaths in Arkansas during 1963 as of September 28. Table 2 shows the Arkansas data available since tetanus was made reportable in 1937.

Table 2. Tetanus Cases and Deaths in Arkansas,

	1937-1963	
Year	Cases	Deaths
1937	2	21
1938	6	17
1939	14	7
1940	12	19
1941	9	7

	1942	10	3
	1943	9	10
	1944	11	11
	1945	6	<u>25</u>
	1946	32	27
	1947	33	19
	1948	28	11
	1949	22	15
	1950	23	5
	1951	21	15
	1952	15	10
	1953	15	7
	1954	15	9
	1955	13	8
	1956	14	4
	1957	8	6
	1958	16	9
	1959	5	4
	1960	12	9
	1961	13	8
	1962	11	10
	1963*	4	4
30	weeks only fo	r 1963	

\*39 weeks only for 1963.

Bacteriological studies of tetanus began in 1884 when Carlo and Rattone produced tetanus in rabbits by the inoculation of pus from the cutaneous lesions from a human case. The same year Nicolaire produced tetanic symptoms in mice and rabbits by soil inoculations. The following year he discovered a bacillus which may have been Clostridium tetani although he was unable to isolate it in pure culture. It was in 1889 that Kitasato isolated pure cultures of the bacillus from cases of human tetanus, with which he was able to reproduce tetanus in animals. It was Kitasato who utilized anaerobic methods to culture the organism as well as the elimination of non-sporebearing contaminants through heat.

Vaillard and Gouget in 1892 destroyed the vegetative bacillus and the toxin by heat of 65°-67° C.

lor half an hour, then injected the remaining toxin-lree spores into guinea pigs without giving rise to the disease. Their microscopic studies showed that spores under these conditions do not germinate after these temperatures, rather were completely ingested by phagocytes in two or three days. On the other hand, they demonstrated that spores protected from phagocytes by wrapping in filter paper germinated and gave rise to fatal tetanus. In 1905 Flexner and Noguchi destroyed the toxin in five minutes by temperatures of 68° C. concluding that the tetanus toxin is even less stable than diphtheria toxin. Direct sunlight inactivates tetanus toxin in 15 to 18 hours; with the addition of  $5\frac{67}{70}$  eosin, time was shortened to one hour. Dry toxin is more resistant, thus precipitation and drying serve a double purpose of concentrating and stabilizing the toxin. Marie and Morax elaborated on the 1897 work of Marie and the 1890 work of Bruschettini as well as the work of Meyer to demonstrate the passage of toxin up the axis cylinders of the nerves to the spinal cord. Considerable controversy regarding the exact mechanism by which tetanus toxin is absorbed, disseminated, and exerts its action remains in the literature. Thus, in addition to the above mentioned method, the toxin may be absorbed by the lymphatic system or the capillary bed per se, thus to the general circulation, subsequently to the central nervous system.

The foundation for serum therapy was established by the epoch-making discovery by Von Behring and Kitasato in 1890 of antitoxin to the toxins of tetanus and diphtheria. Serum therapy has the theoretical basis of neutralization of the toxin by antitoxin, yet fixed toxin cannot be reached by circulating antitoxin. The clinically unsuccessful role of serum therapy, in spite of intensive research along these lines, leads to such authorities as Eckmann to state, "It is difficult to accept arguments in favor of serum therapy." There has recently been considerable enthusiasm for increased oxygen tension therapy utilizing decompression units. Dramatic results were described by its proponents, however complications of therapy, as well as the lack of reproducibility of results have emphasized the lack of a causal therapy and the meagerness of even our best symptomatic measures. Continuous infusion of curare-like drugs together with prolonged artilicial respiration for two or three weeks, and extensive medical and nursing care are the essence of successful treatment. If ever consideration of pure economics is justified, here is the case at point. Prevention is relatively inexpensive compared to the expense of successful therapy to say nothing of the socio-economic loss when therapy is given over any period of time and the patient still dies!

Passive immunization has been considered lifesaving in many instances, however, there is considerable evidence to suggest that this is theoretical and that serum prophylaxis alone is empirically of questionable value because of the many different disadvantages and dangers associated with heterologous serum. Doctor Eckmanu goes so far as to say that serum prophylaxis usually is contraindicated and that its omission altogether is allowable so long as active immunization is begun. He also states, "Considering the experimental, clinical and statistical observations of the past years, it is difficult to understand the confidence with which serum injections are still given to injured persons as prophylaxis." Passive immunization, at best, lasts only two or three weeks. Rosenau emphasized that the standard prophylactic dose of antitoxin, which was considered to be 1,500 USA units or 3,000 International units, was believed by certain investigators to be too little and suggested doses of 10,000-20,000 units, the larger amount being reserved for severe injuries or those cases where prophylaxis had been delayed.

Much has been written about the use of passive immunization, largely to emphasize its failures and the greater danger from the use of heterologous serum. Reactions to the serum sometimes occur even after the patient shows no evidence of sensitivity when tested routinely. Reactions may be severe and sometimes fatal. In a country like the United States where the level of general and personal sanitation is considered high, many individuals survive various and sundry injuries without medical aid and escape tetanus infection; therefore, a perpetuation of self-care is assured. Likewise, many physicians in this country may not give tetanus antitoxin to every patient with a break in the skin even though he knows that such is all that is needed for the tetanus bacillus to gain entrance to the body. This is especially true when the patient shows a definite sensitivity to the serum when tested.

Active immunization is the method of choice for all individuals since the tetanus organism is nbiquitous in nature. There is no better proof of the efficacy of prevention of tetanus by active immunization than the experience of the Armed Services who practiced widespread immunization of personnel. Community acceptance of active immunization is a responsibility of the medical profession and of the community leaders, nevertheless the ultimate responsibility for active immunization of the individual patient is resolved to the patient or his parent or guardian in case of a young child or the aged.

Pediatricians routinely immunize all of their patients not only against tetanus but also against diphtheria and pertussis in the same procedure. The experiences of the private physicians and of the State Board of Health in utilizing the adult tetanus-diphtheria toxoid preparations in Arkansas has been favorable although its expanded use is definitely indicated as it is virtually impossible to eliminate the tetanus organism from the environment.

The human body's most efficient circulation antibody against tetanus toxin is that produced by the individual himself as a result of having tetanus toxoid administered intramuscularly. Prímary immunization is considered complete after the second dose of 0.5 ml, of the tetanus toxoid two months after the initial injection of 0.5 ml. toxoid. Young children require a third dose because of the fact that the younger individuals do not form antibodies as well as older children and adults. A booster injection is recommended one year after the second injection and every three or four years thereafter. A stimulating or booster injection given following an injury enables the body to promptly recall antibody formation. There is some indication that this process may be impeded in cases exposed to considerable radiation, therefore, this may be a justifiable instance for continuing stockpiling heterologous serum containing tetanus antitoxin.

Allergies to the tetanus fluid toxoid itself are considered impossible although some may occur due to peptones or other foreign protein in the culture medium, therefore, the quality and purity of the culture medium and the final products are important for further reducing the possibility of reactions.

Forensic medicine dictates adequate coverage by insurance for the physician who is called upon to treat a non-immunized injured individual, thus he has more than a medical problem. If he chooses to use tetanus serum and the patient develops any of the allergic manifestations, especially severe or fatal ones, he may be held liable. If he omits serum prophylaxis in instances other than where the patient is extremely sensitive to the heterologous serum, and the patient subsequently develops tetanus, he is in danger of being accused of malpractice. The weight of the contraindications to the use of serum is recognized by most of the medical profession and to ignore it unjustly places the responsibility on the physician for a decision in the choice made because of the patient's failure to be adequately protected against tetanus.

The dilemma of the choice between the use or omission of serum prophylaxis is extremely well stated by Doctor Eckmann in his book *Tetanus Prophylaxis and Therapy*. In Germany the Board of Surgery has refused to hold an individual physician responsible for the decision to give or not to give tetanus antitoxin since "they have noted in this regard that the lawmakers had the chance to reduce greatly the risk of tetanus for the population as a whole by means of mass immunization and had neglected to do this." This same position has been expressed by Germany's Society of Fraumatology, which I assume is a maternal health organization. A similar situation exists in Switzerland.

Occasionally neonatal tetanus is encountered although it is rare in Arkansas because the physicians and midwives utilize aseptic techniques, nevertheless, the umbilical stump may be contaminated by one means or another subsequent to the initial tying and bandaging. In some areas the practice of applying ashes or soil to the umbilical cord of newborn babies is still encountered and is responsible for frequent neonatal deaths in such instances.

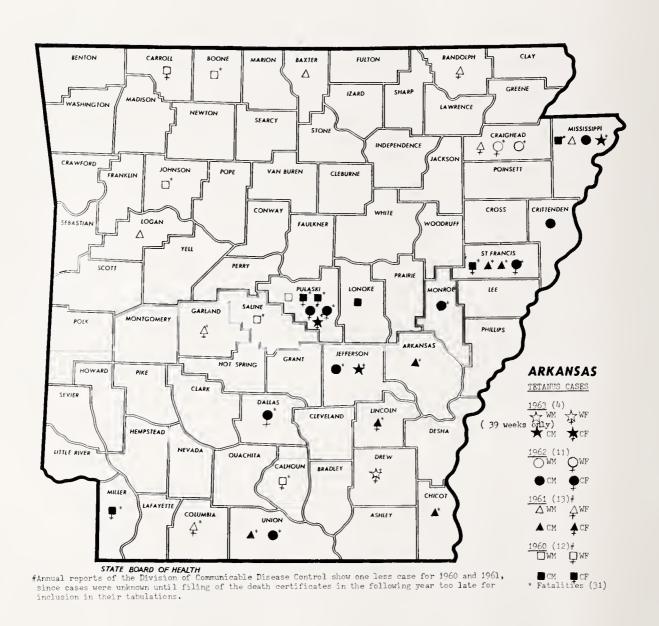
Now that knowledge of active immunity against tetanus is fully publicized there is absolutely no excuse for any individual to fail to avail himself of this protection. It is unrealistic to saddle the physician with the responsibility for the patient's failure to request active immunization against tetanus. In reality the employer, whether private or city, county, state, or federal governmental organization, shares the responsibility if he employs anyone who is not fully protected against tetanus since there is absolutely no situation in which one is entirely free from the risk of tetanus although many may be less at risk than others. Likewise the school board, superintendent, prin-

cipal, and classroom teacher, and particularly coaches, are responsible to see that students are protected against tetanus before participating in any school activity by which the pupil's skin may be broken from any cause. Further, anyone who advises an individual against acquiring such protection should be held liable whether it is based on superstition or "so-called" religious basis. One of these "so-called" religious groups actually endangers the individual's health in many ways, but particularly to the toxin of snakebite, to streptococcal or staphylococcal infection, and to teta-

nus, all from the same bite. Although such statement of fact may bring unwarranted criticism, it is placing the responsibility where it belongs.

The accompanying map graphically depicts the demographic as well as the geographic ravages of tetanus in Arkansas for the past four years. The fourth case for 1963, which occurred in August, was reported by death certificate as this article was going to press on October 9.

Wm. L. Bunch, Jr., M.D., M.P.H., Director Division of Preventive Medical Services





Guest Editorial

## LET'S UPGRADE MEDICAL CARE IN ARKANSAS

Martin C. Hawkins, Jr., M.D.\*

A critical analysis of the problem by our medical educators and health agencies would reveal that, although the people in Arkansas probably receive as good medical care as those in comparable states, there still remains much to be desired, especially in the smaller towns and rural communities.

Great strides have been made during the past several years under the "Hill Burton Act" in building modern hospitals in areas of the state where none existed previously.

Unfortunately, most of our hospitals, except, perhaps, those in the larger cities in the state, are woefully understaffed: not enough nurses and technicians; in many instances no pathologists, no competent anesthetists, and no physicians who have received formal training in various fields of medicine. In these areas the physicians are faced with doing the best they can under the circum-

Something can be done about the shortage of competent medical doctors and nurses in Arkansas.

Suppose we consider first the physician shortage. At the present time, our University of Arkansas School of Medicine is not graduating a number sufficient to supply the needs in Arkansas. Our approved hospital resident training programme in the state cannot take care of all those who wish to receive formal training, so many go to other states and never return.

Some plan should be put into effect which time and part time, to receive additional compensation. Most all other teaching medical centers in the United States accomplish this by allowing the teaching physician to make a personal charge

would permit our underpaid teaching staff at the University of Arkansas Medical Center, both full for treating private patients who are referred to the medical center.

Such a change in our policy would be an added incentive for additional highly trained physicians to join our teaching staff and for the ones we have to remain.

Perhaps by so enlarging our faculty, our resident training programme could be enlarged and more of our young medical school graduates could be persuaded to complete their training in Arkansas, and to remain here.

What else can we do to at least partially compensate for this inevitable loss of a number of our native graduates? For a number of years we have had a state law which, in effect, makes it impossible for a physician to receive license to practice medicine in Arkansas, unless he has first graduated from an "A" class medical school in the United States or Canada, even though he or she may have completed an internship and/or a residency in an approved training programme in a United States hospital. No doubt there was a need for this law at the time it was enacted. However, it seems to me to have served its usefulness and should now be replaced with one based on educational achievement rather than the geographical location of a medical school.

There are a number of countries with medical schools comparable to those in the United States and Canada. A list of those with acceptable standards could easily be obtained through the American Medical Association. A committee. including some of our medical educators, could then draft legislation setting forth new requirements for licensure in Arkansas.

Many young graduates from foreign medical schools would like to live in Arkansas. Many would not only make good citizens but would

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improve medical care in the state. Not only should we give them the opportunity, we should make every effort to encourage the desirable ones to come to our state.

What about the nurse shortage? Again, our approved schools of nursing for registered nurses do not graduate enough to supply the needs in Arkansas. Also, many of our registered nurses are educating themselves out of the nursing-care category into the executive branch of our medical team. Many are employed as teachers, supervisors of health programmes in industry, officers in our armed services, and as nurses in our other government agencies. Many get married immediately after graduation and never nurse.

During the past few years, we have been fortunate in having several good licensed practical nurses' schools in Arkansas. The graduates of these schools are fast taking over the responsibility of actually nursing the sick in our hospitals. I suggest that the licensed practical nurse programme be encouraged, expanded and upgraded

in every practical way possible. The age limit should be lowered, to attract the high school graduate. Young women of all races should be made aware of the desirability of becoming a licensed practical nurse. Many of the young men who are now ward boys and orderlies in our hospitals may qualify as candidates for licensed practical nurse schools. These male nurses could replace some of the women nurses in hospitals, such as veterans, where patients are predominantly male.

So that the licensed practical nurse would be competent to assume added responsibilities, a more inclusive curriculum, implemented by a faculty with excellent up-to-date credentials, should be mandatory. Each candidate should be more searchingly screened.

People in many areas of Arkansas deserve better medical care than they are getting. We, as physicians, could do much to improve it. Let's get on the ball!



#### ANSWER-Electrocardiogram of the Month

RATE: 100 RHYTHM: A-V nodal

PR: - sec. QRS: .08 sec. QT: .34 sec.

INTERPRETATION: Abnormal. A-V nodal rhythm. Right ventricular hypertrophy. Digitalis effect.

COMMENT: This patient denied digitalis medication but had been given medicine for his dyspnea, which apparently was digitalis. He had marked bullous emphysema and obvious cor pulmonale.

#### ANSWER-What is Your Diagnosis

Diagnosis: Duodenal atresia

X-Ray Features: There is a large air bubble in the upper abdomen representing the stomach and greatly dilated first and second portions of the duodenum. There is no air in the rest of the gastro-intestinal tract.

The findings are those of a complete high intestinal obstruction and at surgery the duodenum was found to be atretic just beyond the second portion of the duodenum. The area of atresia was resected and an end-to-end anastomosis was done.



## Safe Practices in the use of Diagnostic X-ray Equipment

Safe practices in the use of diagnostic x-ray equipment have been recommended in a report issued by the INDUSTRIAL MEDICAL ASSO-CIATION. The recommendations are designed to minimize x-ray exposure to the patient, the x-ray technician, and to personnel located outside of controlled areas, without sacrificing any of the necessary diagnostic qualities of the x-ray examination.

For patient protection, it is recommended that fluoroscopic examinations should not be made if the same examination can be done by film, or unless it is necessary to observe motion, and under no circumstances should they be done prior to full dark-adaptation; that the lowest radiation output that will yield satisfactory diagnostic results should be used for an x-ray examination; that in any x-ray examination the gonads of persons who have not passed the reproductive age should be protected from the useful beam by the use of careful field collimation to confine the beam to the area of interest, with special gonad shields being used when this will not impair the value of the examination; and that cones should be employed to restrict the radiation beam to the area of interest.

For the protection of personnel operating x-ray equipment, including those who operate mobile x-ray equipment, it is recommended that only qualified persons should be permitted to operate the equipment and that every installation should be under the supervision of a qualified radiologist or the physician. It is also recommended that only persons required for the radiographic procedure should be in the radiographic room during exposure; that the technician should always wear the proper protective equipment to minimize exposure; and that only the person being x-rayed should be in the useful beam.

Personnel monitoring with film badges, pocket chambers, or pocket dosimeters, is advised for each person in controlled areas, except patients, for whom there is any reasonable probability of receiving a dose exceeding one-fourth of the maximum permissible dose, taking into consideration the use of protective gloves, aprons, or other radiation limiting devices. It is suggested that permanent records of all personnel-monitoring results be kept along with the individual's name and social security number. An occupational physical examination at least once a year is advised for all personnel exposed in control areas, with special emphasis on the blood examination.

In the maintenance of the x-ray equipment, it is recommended that all interlocks, movable barriers and protective garments and devices should be re-surveyed by a qualified expert whenever there is a change in the installation which could produce a radiation hazard; that the radiation equipment should be resurveyed at least annually by an outside firm, the manufacturer or by an independent radiation physicist; and that any electrical or radiation hazards found to exist should be promptly eliminated.

#### **Construction of Hawkins Clinic in Searcy**

The Hawkins Clinic building at 403 East Lincoln Avenue in the industrial area in south Searcy was ready for occupancy about the first of October.

The clinic consists of examining and treatment rooms and X-ray and clinical laboratory facilities.

#### **Program for Rural Health Conference**

Some of the nation's top medical and health leaders discussed the health problems of the American farmer at the 16th National Rural Health Conference of the American Medical Association, September 20-21.

The opening session followed the theme of "Who Shares Your Health Dollar?" Speakers were Dr. Robert J. Benford, Dr. R. B. Robins, Dr. Harold M. Flickinger, Frank S. Groner, and John J. Vance.

The second session of the opening day was a panel on "Newer Concepts and Challenges in Mental Health," with talks by Dr. Robert Felix, and Dr. Thaddeus Krush. Also, on the afternoon program was an address by Dr. Sumter Arnim speaking on "Self-Help Methods of Value for the Prevention of Dental Disease."

The theme of the conference will be "Health Is a Bargain." Panel discussions will include newer concepts and challenges in mental health and self-help methods of value for the prevention of dental disease.

#### Ministers Attended Medical Meeting Here

The Ouachita County Medical Society invited the local ministers to their monthly meeting on September 10. The purpose was to find ways and means for greater cooperation between these two groups.

Featured speaker was Dr. Don Corley, chaplain at Baptist State Hospital in Little Rock.

## AMA Official Says Medicare May Bring Federal Medicine

Passage of the administration-backed King-Anderson medicare bill for senior citizens under Social Security would herald the coming of federalized medicine to the United States, Dr. Norman A. Welch of Boston, president-elect of the American Medical Association, told delegates to the 16th National Rural Health Conference.

The bill could lower the quality of medicine for all because it would introduce into our system of freely practiced medicine the elements of control, compulsion and regulation. Historically, the federal government has not interfered in medical affairs, and it should not begin to do so now. The quality of medicine today in our country and the services it makes available to the American public were not arrived at because somebody dictated the course.

It offers a limited amount of hospital or nursing home care to the limited number of over 65's, and the great need of older people is not this kind of care. Illnesses such as heart trouble, high blood pressure, kidney disease, diabetes or arthritis are among the more prevalent ones today and all of these are best treated at home, best treated where the patient can continue to be active. None of these at-home treatments is covered by the proposed legislation.

Dr. Welch charged that passage of the King-

Anderson bill would mean an increase of \$6 million a day in taxes, or \$2.2 billion a year. He said the American Medical Association will seek (1) revisions in the Kerr-Mills law to ease eligibility for greater participation, (2) expansion of community health programs for the aged, and (3) expansion of the health insurance and prepayment plans.

#### Polio Clinics in Columbia County

Dr. John Ruff, chairman of the Columbia County Medical Society's polio immunization committee, has announced that Type III polio vaccine was made available to Columbia County residents Sunday, September 29.

This will be the third and final phase of operation "Sugar Cube Sunday" which will give county residents a thorough immunization against three types of polio.

Vaccines of Types I and II were given earlier in the summer and proved very successful.

Once again the society will require the written permission of children under 21 to take the vaccine but immunization cards issued at either of the previous clinics will serve as permission slips.

#### Star City Doctor Wants a New Hospital

Dr. Richard C. Petty of Star City says that Star City needs a hospital "in the worst way." The city's other physician, Dr. J. W. Freeland, said he chose not to state his position on the matter. Petty was emphatic in his support for a 4-mill tax increase to build a Lincoln County hospital. Freeland said, "I have nothing to say for the newspapers." The issue was decided in a special election on September 24. Strong opposition has developed in the Arkansas River delta section of the county around Grady and Gould. Petty said it was an expensive chore for Star City people to travel to the Jefferson Hospital at Pine Bluff. He cited the case of one of his patients who needed a special X-ray. He said the man lost a day's pay because he had to go to Pine Bluff and be admitted to the hospital.

Petty said he felt that a hospital was needed for emergency work. He said such a facility would pay for itself.

Dr. J. T. Herron, the state health officer, stressed that he was unwilling to take sides in the matter of a hospital for Lincoln County. But he said communities with smaller trade areas than Star City were operating hospitals profitably in

Arkansas.

Herron pointed out that the Hill-Burton Act, which provided federal matching money for local hospital construction, was originally designed to build hospitals in rural areas to help draw doctors to those areas. If the bond issue was approved, Lincoln County will request federal Hill-Burton aid to pay half the cost of the hospital. Herron said that 20 more hospital beds have been reserved for the Pine Bluff area including Star City under a state hospital plan and that Lincoln County would get the federal money if the bond issues was adopted.

## How Closely is the Supply of U. S. Medical School Graduates Keeping Pace with the Population

New licentiates added annually in the United States to the pool of Practitioners, researchers and teachers are derived from two primary sources: U. S. medical school graduates and foreign medical school graduates.

1962: as July 1, in thousands

Population, Including Armed Forces Abroad –189,209

Number of Physicians, Including Those in Armed Forces, per 1 million: 250,535–132.4

Total Annual Licentiates Representing Additions to the Medical Profession per one hundred thousand population 8.005–4.2

U. S. Medical School Graduates per one hundred thousand population: 7,168–3.8

Graduates of Foreign Medical Faculties Representing additions to the Medical Profession, Per one hundred thousand population 1,357–0.7

Data from Health Manpower Source Book-Section 14, p. 3, Table 3. 1960 and 1962 population figures include 50 states, D. C., Puerto Rico and outlying areas. Number of physicians in 1962 excludes 6,500 Canadian and foreign doctors in this country in internship and residency and intending to return home on completion of their training.

#### THE MONTH IN WASHINGTON

Washington, D. C.—The federal government has, in effect, branded the so-called cancer drug krebiozen as worthless.

Boisfeuillet Jones, special assistant to the secretary of Health, Education and Welfare, said that a "scientifically unimpeachable" Food and Drug Administration analysis of krebiozen "casts strong suspicion" on claims for it as a cancer treatment.

The FDA announced September 7 that it had analyzed a sample of krebiozen powder furnished by Durovic and found it to be creatine, a substance naturally present in the human body and considered worthless in treatment of cancer.

In a September 11 letter to the FDA, Durovic challenged the analysis. He said studies made for him by "two reputable independent laboratories" disagreed with five of the FDA findings.

Replying to the Durovic letter, Jones said the FDA analysis was "scientifically unimpeachable." He also placed full responsibility on Durovic and Dr. Andrew C. Ivy, his chief backer, for any consequences of withdrawing the drug from patients who have taken it.

"We are fully sympathetic with those patients who believe that krebiozen is necessary for the maintenance of health and life," Jones wrote. "You and Dr. Ivy have encouraged their belief; you made krebiozen available to them with claims of benefit... The full moral responsibility for the consequence is yours...

"Tests made by the FDA demonstrate that creatine is only slightly soluble in mineral oil and that the creatine which you provided and called krebiozen is soluble to exactly the same extent."

\* \* \* \* \*

The federal government has a new \$235 million program that will provide financial aid for construction of medical schools and loans to medical students.

The Senate in mid-September passed by a vote of 71 to 9 the Administration's medical education bill in the identical form that the House had approved it earlier. President Kennedy promptly signed it into law.

Before approving the bill, the Senate rejected by a 43-to-39 vote an amendment that would have forgiven part of the loan to a student if, after graduation, he practiced in an area where there was a shortage of doctors. The Senate also voted down, 63 to 18, a proposal that would have knocked out loans to students.

The bill authorizes a three-year, \$175 million matching grant program for the construction, replacement, or rehabilitation of accredited public or nonprofit teaching facilities for the training of physicians, dentists, pharmacists, optometrists, podiatrists, nurses, or professional public health personnel. A grant can not exceed 662/3 per cent of the cost of construction for new schools or new

facilities at existing schools.

The new law authorizes a loan program, patterned after the National Defense Education Act, for full-time students in schools of medicine, dentistry or osteopathy.

Loans can not exceed \$2,000 for a student in any academic year. Schools will be required to give preference to first-year students in the school year 1963-64. Loans will be repayable over a tenyear period which would begin three years after the student ceases to pursue a fulltime course of study.

The unpaid balance of a loan will bear 3% interest per annum or the going Federal rate for obligations having a 15 year or more maturity, whichever is higher. Loans will be made without security or endorsement, except in the case of a minor where the note would not create a binding obligation.

A \$175 million nuclear fallout shelter program has been dealt a stunning blow by the House Appropriations Committee.

The committee denied most of the funds sought by the Defense Department for the shelters and brought an expression of concern from Speaker McCormack, who called the program a "Fourth arm of our national defense."

The House had approved a bill authorizing the money for a one year program of federal aid for construction of new shelter spaces in non-profit private and public institutions such as schools and hospitals.

The committee's action denied all of the \$175 million sought for new shelter construction, including additional funds for building shelter spaces in federal buildings. It allowed only \$7.8 million to continue locating and marking shelter spaces in existing private and public buildings.

The Food and Drug Administration has discovered that its August warning against the use of the birth-control pill Enovid by women over 35 was a mistake.

In releasing the final report on the oral contraceptive by an advisory committee of medical experts appointed to study the relationship between consumption of the drug and the occurrence of certain circulatory disorders, principally thrombophlebitis and pulmonary embolism, the FDA said:

"The preliminary report of the committee

released on August 4 suggested that there was a statistically significant increase in risk in women 35 years of age or over who were taking Enovid. Further statistical evaluation by the committee has indicated that a higher rate of fatalities due to thrombo-embolism observed in Enovid users 35 years of age or over is not statistically significant.

"The manufacturer of the drug (G. D. Searle and Co.) is being advised that references in labeling, which FDA requested last month, may be modified to state that the higher rate of fatalities is not statistically significant. The labeling will continue to advise physicians of the principal contraindications for use of Enovid as a contraceptive, namely: certain cancers, pre-existing liver dysfunction or disease, and a history of thrombophlebitis or pulmonary embolism."



## Pilot Workshop in Teratology Scheduled for February 2-8, 1964

The Commission on Drug Safety will sponsor a pilot Workshop in Teratology, February 2-8, at the University of Florida, Gainesville, through a grant from the Pharmaceutical Manufacturers Association. Applications are now being invited from scientists in such fields as obstetrics, pediatrics, toxicology, pharmacology, biochemistry, endocrinology, pathology, and others as determined by the Admissions Committee. Attendance will be limited to 40.

#### February Meeting of the Mid-South Postgraduate Medical Assembly

The Executive Committee of the Mid-South Postgraduate Medical Assembly just announced its plans for the forthcoming program for February.

General Surgery:

Owen H. Wangensteen, Minneapolis

"Gastric Cooling and Freezing for Manifestations of Peptic Ulcer"

"Alimentary Tract Malignancy with special Reference to Stomach Colon"

Warren H. Cole, Chicago

"The Role of Nutrition in Surgery"

"Upper Gastrointestinal Hemorrhage" The meeting will take place February 11-14, 1964, at Memphis, Tennessee.

#### Shuffield Backed for Senate

Dr. Joe Shuffield, a member of the Arkansas State Hospital Board of Control, apparently will get the official backing of the Arkansas Medical Society for the office of state senator from Pulaski County. He will seek the seat held by Senator Ellis Fagan of Little Rock until his recent death. There have been doctors in the upper house before but not in recent years.

Dr. Shuffield is a friend of the Faubus administration and possibly could depend on some support from that quarter. There is one member of the State Hospital board in the Senate now. He is Senator Olen Hendrix of Prescott, and his dual position has brought a number of questions as to legality.

## The Seventh Annual Cardiac Symposium of the Arizona Heart Association

The Seventh Annual Cardiac Symposium of the Arizona Heart Association in Phoenix will convene Friday, January 24 and 25, 1964, at the Arizona Biltmore Hotel.

The speakers for the 1964 Cardiological Sessions are: William Dock, M.D.; Herman K. Hellerstein,

M.D.; Thomas N. James, M.D.; and Earle B. Kay, M.D.

#### "Cardiovascular Drug Therapy"

The purpose of this postgraduate course is to evaluate the current cardiovascular armamentarium. The rationale and drug spectrum of antihypertensive drugs, antignginal compounds, diuretic agents, vasopressors, anticoagulant and antiarrhythmic drugs and cardiotonic compounds will be explored in relation to their clinical pharmacologic application.

Presented by Hahnemann Medical College and Hospital in Philadelphia, January 20-23, 1964.

#### Course in Coronary Arteriography

The Division of Continuing Education of the University of Texas Graduate School of Biomedical Sciences at Houston will present a course on Coronary Arteriography, December 2, 3 and 4, 1963, at the Texas Medical Center, Houston, Texas. Dr. F. Mason Sones, Jr., of the Cleveland Clinic, will discuss the evolution of this technique, the normal coronary circulation, the clinical application of cine coronary arteriography and its use in evaluation medical and surgical therapy in patients with coronary artery disease.



#### PERSONAL AND NEWS ITEMS

#### Dr. J. M. Kolb To Attend Conference

Dr. James M. Kolb, Sr., left Fort Smith by plane, Thursday, September 19, for Kansas City, Missouri, where he attended a conference for state officers of the American Medical Association.

Following the conference Dr. Kolb took a post graduate course in acute respiratory diseases at the University of Kansas.

Dr. Kolb recently returned from Chicago where he served in his elective capacity on the Council on Constitution and Bylaws of the American Medical Association. He is also chairman of the Committee on Medical Practices of the House of Delegates of the A. M. A.

#### **Hot Springs Physician Shot**

Dr. W. O. Arnold, a Hot Springs physician, suffered bullet wounds in his right arm and side Saturday when he was shot at a Hot Springs clinic.

Argo Stidham, was held on charges of assault with intent to kill.

Arnold was shot with a foreign-made 9mm pistol. He was taken to a Hot Springs hospital. Police Chief John Emery said the shooting occurred in Arnold's office in the Wade Clinic in downtown Hot Springs. Arnold was seated at his desk when Stidham, who had been a Hot Springs resident about two years, opened the door and fired at him as he was rising from his chair.

## Dr. White Named to the Board of Directors of Morrilton School District No. 32

Wylie Cox, and Dr. Henry B. White, physician and surgeon, were elected to the Board of Directors of Morrilton School District No. 32. Cox will fill the position vacated by Dr. Jack Mobley, and Dr. White will fill the position of Freddie Moll who was seeking reelection.

#### Dr. Saltzman, Chief of Staff of New Hospital

At a regular meeting of the Baxter County Medical Society, October 11, Dr. Ben N. Saltzman was elected chief of staff of the new Baxter General Hospital.

Opening of the 39-bed facility was scheduled in November. Dr. Saltzman is secretary of the Medical Society.

Dr. James Davis of Salem was elected to membership of the County Medical Society. Dr. Fred T. Hargrove, radiologist of Mountain Home, attended their first meeting as members of this group. Dr. John F. Guenthner presided.

#### Stocker Named Chief of Staff at City Hospital

W. J. Stocker was elected chief of staff of City Hospital Fayetteville, at the recent annual meeting of the medical staff. Other physicians named to the staff are J. K. Patrick, vice chief of staff; and R. A. Graham, secretary-treasurer.

Dr. Stocker, who succeeds Dr. Jeff Baggett, is a graduate of the University Medical School and served his internship at Shreveport Charity Hospital and has maintained a practice in this state since June 1940.



Claude Bernard Owens, 82, of Little Rock died Sunday, September 8, in a Little Rock Hospital. He was the father of Dr. Gastor B. Owens, Morrilton physician. He was a native of Monticello and had lived at Little Rock for 60 years. Before his retirement, he operated drug stores at Fourteenth and Wolfe and Fourteenth and Bishop streets, Little Rock.

Mr. Owens was a member of the Arkansas

Pharmaceutical Association and the Woodmen of the World.

#### **Doctor Evans Dies at 83**

Dr. Lorenzo T. Evans, aged 83, of Batesville, died September 27 in a Batesville Hospital. Dr. Evans was a graduate of the University of Tennessee Medical School. He taught school for several years. He was a charter member of the Rotary Club in Batesville and past president of the Arkansas Medical Society (1947-48) and a member of the Independence County Medical Society.

He was a member of the Mount Zion Lodge No. 10, F and AM, and was made a Master Mason in 1901; he was a member of the St. Elmo Commandery, No. 13. He was a shriner and a member of the Scimitar Temple in Little Rock.

Services were held Sunday September 29, at 2 p.m. at the First Presbyterian Church with the Rev. Ed McSpadden and Dr. John Spragins officiating. Burial was in Oaklawn Cemetery. Honorary pallbearers were officers of the Presbyterian Church and members of the Independence County Medical Society.



#### **Auxiliary Heard Pediatrician**

Dr. Francis M. Henderson, staff pediatrician with the M. C. John Clinic, was guest speaker Monday night, September 9th, at Stuttgart Hospital Auxiliary's first meeting of the 1963-64 year. Dr. Henderson's subject was, "The Accident Prone Child."

A native of St. Ann, Missouri, Dr. Henderson holds the A. A. degree from Southwest Baptist College, Bolivar Mo., and the B. A. Degree from Ouachita Baptist College, Arkadelphia. He received his M.D. degree from the University of Arkansas in 1960. He interned at the University of Arkansas Medical Center in Little Rock, and was a resident physician at the Children's Hospital of Washington University in St. Louis from

1961-1963. For the past year he was also faculty instructor in Washington University Department of Pediatrics.

#### Conway Medical Student Wins Buchanan Key

James Kane of Conway received the Buchanan Key, one of the University of Arkansas Medical School's top awards, at fall convocation ceremonies.

Charles W. Cunning of Lonoke, a student in the School of Pharmacy, received a \$270 award from the Archer Drug Co.

Claudie Chamness, a student at the School of Nursing, received a \$300 award from the Medical Center Auxiliary.

Thomas Stewart Harris, a junior at the University of Arkansas Medical School who says he may enter academic medicine, won three of the school's top awards at the Fall Convocation ceremonies.

Harris was given the Buchanan Key for scholastic achievement, the LaRoche Award (\$250 watch) for the student who best personifies the ideal of a physician and the \$1,000 scholarship given by the National Avalon Foundation.

#### Medical Auxiliary Board Convenes

The state board meeting of the Woman's Auxiliary to the Arkansas Medical Society was held Wednesday, September 25, at 10 a.m. at the student union building of the Medical Center.

Mrs. Glen Keller, president of the auxiliary, presided. Attending were the state officers and board members, county auxiliary presidents, and members from throughout the state.

In addition to the president's address there were three featured speakers. Dr. George Jackson, Ross Mauney, and Dr. Joe Norton. The delegates saw the film "The One Who Heals."



#### PROCEEDINGS OF SOCIETIES

#### Fifth Annual Pediatric Colloquy

The Fifth Annual Pediatric Colloquy sponsored by Hillcrest Medical Center is to be held December 6 and 7, 1963. The theme of the Colloquy is "Abnormalities of Early Life." The topics to be discussed are Congenital Anomalies, Enzymopathies, Fetal Environment, Obstetrical Anesthesia, Resuscitation of the Newborn, Evaluation of the Distressed Infant, and Psychic Development of the Infant. Speakers will be Virginia Apgar, M.D.; Murdina Desmond, M.D.; Henry Kirkman, M.D.; James A. Merrill, M.D.; and James T. Proctor, M.D.

#### Moderation is the Word

Moderation is the word, according to Rome A. Betts, executive director of the American Heart

Association. Betts was a guest speaker at the third annual Cardiovascular Workshop for nurses held at the Medical Center Auditorium, October 3.

One objective of the association is the support of research to supply knowledge to find the answers to the problems. The second objective is a professional education program to bring the new findings from the laboratory to the physician, nurses and others who will be using the information Public educational activities is the third goal, to bring the latest knowledge to the public through the press and other mass media, pamphlets and brochures.

The association is trying to educate the patient, his parents and family so they may now know how better to take care of themselves and to seek doctor's help when needed, Betts said.

Community service activities is the fourth subsidiary goal. This involves the application of knowlege for the benefits of the patients and victims of heart disease.

Betts pointed out that in the past 15 years the mortality rate has dropped by 6 per cent. This is accounted for in part by a decrease of 44 per cent in deaths by high blood pressure and 22 per cent in deaths by strokes.

#### **Medical Society Meets**

The Southeast Arkansas Medical Association met Tuesday, September 17th at 8 p.m., in McGehee. Dr. J. R. Pierce, a Pine Bluff obstetrician was guest speaker.

Twenty-three members and guests were present at the August meeting in Dumas when Dr. Grimsley Graham of Little Rock spoke on certain chronic chest conditions. Aggravation of these conditions by smoking was emphasized.

#### Medical Society Donated \$350 to Library Fund

A donation of \$350 was made the Baxter County Library Building Fund by the Baxter County Medical Society.

The Medical Society made a profit on the Sabin oral polio vaccine clinics held earlier this year, and the surplus was contributed to the Library Building Fund.

#### Dr. Dorrity Speaks at Rotary Club

Dr. Thomas G. Dorrity of Memphis, a licensed surgeon and now a student at Memphis State University, was guest speaker at the Rotary Club meeting Tuesday, September 10.

Although the subject of his talk was not announced, it is expected he would speak on the evils of communism. His visit was arranged by Jack Neblett, program chairman.

Dr. Dorrity is a graduate of Newberry College and the University of Tennessee School of Medicine. He did his graduate work at Cleveland, Clinic, Cleveland, Ohio, and interned at Methodist Hospital, Memphis.

Dr. Dorrity is a member of the Memphis and Shelby County Medical and surgical societies, the American College of Surgeons, and the Tennessee delegate to the Association of American Physicians of Surgeons. He currently is studying law at Memphis State.

#### Medical Society Donates \$1,000 to Day School

The Faulkner County Medical Society has voted to donate \$1,000 to the building fund of the Faulkner County Day School for Trainable Retarded Children.

The school is operated by the Conway Junior Auxiliary. The Medical Society endorsed the Day School as a much-needed educational project and called for total community support.

The Society commended the Auxiliary for starting the school, which was opened three years ago for children not eligible for public school or could not be admitted to the Arkansas Children's Colony because of quota limitations.

#### The Modern Doctor

The modern doctor saves more lives, saves more of the patient's working time, and takes less of the health dollar than physicians of the past. Dr. R. B. Robins a member of the board of trustees of the AMA, said the doctor of 1963 is more effective than even the doctor of 1962.

John J. Vance, executive vice president of Colorado Medical Service Inc., said good health is a bargain at almost any price. He said modern health costs are \$146 annually per person. He said the average worker devoted 24 minutes of each eight hour working day earning money for health care, and 149 minutes for earning money to pay taxes.

## RESOLUTIONS

Resolution of the Pulaski County Medical Society, October 1, 1963.

WHEREAS, in order to express themselves on the recent loss of Dr. James Barker, the members of the Pulaski County Medical Society do pause with respect, and

WHEREAS, Dr. Barker was for twelve years a member of our Society and his contribution to the well-being of many persons in this community will be long remembered and appreciated, and

WHEREAS, his passing has caused those who knew him to be saddened,

THEREFORE BE IT RESOLVED that a copy of this resolution be sent to his wife and that we shall cause a copy of this resolution to be published in the Journal of the Arkansas Medical Society,

BE IT FURTHER RESOLVED that a copy of this resolution be inserted into the permanent records of the Pulaski County Medical Society.

By action of the Memorials Committee Pulaski County Medical Society John Greutter, M.D., Chairman Read and approved October 1, 1963



#### **BOOK REVIEWS**

PROTEIN METABOLISM, Influence of Growth Hormone, Anabolic Steroids, and Nutrition in Health and Disease, and International Symposium edited for CIBA FOUN-DATION, by F. GOSS BASLE, p. 521, illustrated, published by Springer Verlag Berlin Gottingen Heidelberg, 1962.

This book of Protein Metabolism is readable and complete. It might be thought that the text was too complicated for the general physician, internist or surgeon to understand, but this is not the case. On the other hand it is not the sort of book you would read through. It is more in the

nature of a reference book. This book will be of interest to the biochemist, internist and the research surgeon. It can be used as an excellent reference for medical students.

INTESTINAL BIOPSY, Edited by G. E. W. Wolstenholme, O.B.E., M.A., M.B., M.R.C.P. and Margaret P. Cameron, M. A. for the Ciba Foundation, illustrated, pp 120, published by Little, Brown and Company, Boston, Massachusetts, 1962.

This small book on Intestinal Biopsy is full of interesting information to the practicing physician. The ability to obtain intestinal biopsies without an incision by the means of a biopsy tube has been a really great advance in the field of gastroenterology. This biopsy tube enables the internist to obtain serial specimens throughout the course of non-fatal diseases and correlate the pathology with the clinical disease. Of considerable value in these studies has been the use of the electron microscope. All of this information is covered in adequate form in this small book of 120 pages. It contains excellent pictures. The chapters include the appearance of the intestinal mucosa under the dissecting microscope, electron microscopic studies in certain malabsorption syndromes, studies of tropical sprue, etc. This is a very interesting short book and is heartily recommended. AK.

BILHARUIASIS, a Ciba Foundation Symposium, Edited by G. E. W. Wolstenholme, O.B.E., M.A., M.B., M.R.C.P. and Maeve O' Conner, B.A., illustrated, pp 433, published by Little, Brown and Company, Boston, Massachusetts, 1962.

This book is of little interest to the practicing physician in the United States. It would be of great interest to public health physicians who might have occasion to visit North Africa and certain other places where Bilharziasis is endemic. This book is recommended only as supplemental reading to parasitologists and to physicians interested in practice where this disease is endemic.

### TUBERCULOSIS



#### ABSTRACTS

Sponsored by Arkansas Tuberculosis Association

## EMPHYSEMA, HYPOXIA, AND THE POLYCYTHEMIC RESPONSE

The effect of oxygen deficiency on the red blood cells in patients with emphysema was compared with red-blood cell levels in people living at high altitudes. Levels were found to be lower in the emphysematous patient than in the normal high-altitude dweller.

In normal persons chronic hypoxia results in

THERESE VANIER, M.B.; MAURICIO J. DULFANO, M.D.; CLYDE WU, M.D.; and JANE F. DESFORGES, M.D., The New England Journal of Medicine, July 25, 1963.

polycythemia. This phenomenon has been recognized and studied in high-altitude dwellers, and data obtained from such studies have come to be accepted as the normal response to hypoxia.

Patients with cyanotic congenital heart disease have hemoglobin and hematocrit levels close to those of normal high-altitude dwellers, while many patients with chronic hypoxic lung disease have much lower levels than might be expected from the degree of hypoxia present.

The present study was designed to investigate

the hematologic response to hypoxia in emphysematous patients, and to compare this with that of normal high-altitude dwellers and patients with cyanotic congenital heart disease.

Eighteen unselected patients (17 men, 1 woman) with hypoxia due to chronic pulmonary emphysema and records of 160 other patients with chronic lung disease were studied in detail.

The most marked abnormality in pulmonary function was in the mechanics of breathing. All patients had hypoxemia at rest, and carbon dioxide retention was present in most. In the hematologic studies, the hemoglobin and hematocrit levels showed an inconstant response to hypoxia. In all cases the MCHC (mean corpuscular hemoglobin concentration) was below normal. However, the red cells appeared only minimally hypochromic, and there was not the marked variation in size and shape of the red cells with microcytosis characteristic of iron-deficiency anemia. Reticulocyte counts were normal.

In patients with cyanotic congenital heart diseases and those with emphysema, hemoglobin and hematocrit levels are below those expected in normal persons at altitude. The discrepancy is greater in emphysematous patients than in those with congenital heart disease.

#### HEMOGLOBIN LEVELS IN EMPHYSEMA

Within similar rauges of arterial oxygen saturation, the standard deviation of hemoglobin levels in emphysematous patients differs little from those obtained in low-altitude dwellers. Thus, emphysematous patients are less "polycythemic" than one might have anticipated. The difference between mean hemoglobin levels of normal dwellers at high altitude and those of emphysematous patients at sea levels becomes progressively greater with increasing hypoxia.

In healthy high-altitude dwellers a rise in redcell volume will result in a proportional increase in the venous hematocrit. Emphysematous patients, however, often have a high plasma volume which obscures the rise of red-cell volume. Since it has been shown that cardiac output is not increased in such patients, less hemoglobin and therefore less oxygen are transported to their tissues per unit of time than in high-altitude dwellers, whose cardiac output has also been found to be normal.

In emphysematous patients with a low MCHC, red-cell morphology is not grossly abnormal except for a slight elevation of mean corpuscular

volume and in this way differs from cases of simple iron deficiency. Although half the patients with cyanotic congenital heart disease in the present series had an MCHC below normal, there was no relation between this and figures for arterial oxygen saturation, and relative iron deficiency is the most probably explanation for such findings. *PLASMA IRON TURNOVER* 

In normal persons acute hypoxia such as occurs on arrival at high altitude results in an increased plasma iron turnover, the change being mainly due to a more rapid clearance of iron from the plasma. Conversely, descent from high altitude to sea level will result in a progressive fall in iron turnover.

In only two of the four emphysematous patients subjected to four to six days' oxygenation was there a marked fall in iron turnover. When an acute hypoxic state was produced by withdrawal of oxygen, one patient showed a marked increase in iron turnover. In the other three the plasma iron turnover failed to increase. In all cases infection is believed to have complicated the picture.

Emphysematous patients differ from normal high-altitude dwellers and patients with cyanotic heart disease in two obvious ways that might account for their inability to produce a normal hemoglobin mass.

In the first place, pCO<sub>2</sub>, which is usually low in the two latter groups, is usually high in hypoxic emphysematous patients. In the second place, most emphysematous patients have accompanying chronic bronchitis manifested by chronic cough and daily expectoration. One could assume that chronic infection is present in the bronchial tree even in the absence of ancillary signs of infection.

Emphysematous patients are also subjected to repeated acute infections. It seems likely that the constant presence of chronic inflammation combined with recurrent acute infections in the lung plays some part in preventing an appropriate erthropoietic response to hypoxemia.

#### CONCLUSIONS

Mean values for both hemoglobin and hematocrit are abnormally low in hypoxic emphysematous patients at sea level when compared to those of normal high-altitude dwellers. At comparative levels of hypoxic range the response of patients with congenital heart disease falls between that



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of high-altitude dwellers and emphysematous patients.

In hypoxic emphysematous patients the redcell volume increases as arterial oxygen desaturation becomes marked, but this value is also lower than the degree of hypoxia leads one to expect.

At any level of arterial oxygen saturation the scatter of individual hemoglobin, hematocrit, and red-cell volume is similar in both normal high-altitude dwellers and patients with emphysema, and becomes widest below 85 per cent of arterial oxyhemoglobin saturation. The response of the patient, whether normal or abnormal, ap-

pears progressively less predictable under conditions of increasing chronic hypoxic stress.

Many emphysematous patients have an increased plasma volume although heart failure may not be obvious clinically. An increase in red-cell volume may fail to be reflected in the venous hematocrit level because of the presence of an increased plasma volume.

The low mean corpuscular hemoglobin concentration observed in hypoxic emphysematous patients appears to be related inversely to carbon dioxide retention.



## Radioactive Vitamin B<sub>12</sub> After Partial Gastrectomy

D. J. Deller, S. W. Perry, and L. J. Witts *Lancet* 2:162 (July 27) 1963

Nine men who had had partial gastrectomy for peptic ulcer, and who afterwards showed megaloblastic anemia with subnormal levels of vitamin  $B_{12}$  in the serum, showed complete achlorhydria. Absorption of tracer doses of radio-vitamin  $B_{12}$  was grossly impaired in seven; in the other two it was at the lower limit of normal. In eight of the nine men absorption of vitamin  $B_{12}$  was restored to normal by intrinsic factor. The remaining patient had a blind-loop syndrome and his absorption improved after treatment with chlortetracycline. None of the patients had evidence of jejunoileal insufficiency.

## Congenital Tracheoesophageal Fistula in Associaiton With Esophageal Atresia

D. J. Waterston, R. E. Bonham-Carter, and E. Aberdeen *Lancet* 2:55 (July 13) 1963

The effect of a patent tracheoesophageal fistula in association with esophageal atresia was analyzed by dividing a group of 218 infants into 2 groups: (1) esophageal atresia with a patent fistula, and (2) esophageal atresia without fistula. The birth-weight, development of pneumonia, frequency of additional congenital anomalies, and hydramnios in the mothers in the two groups were compared. There was a significantly increased prevalence of pneumonia in infants with a patent fistula, and a very significantly increased prevalence of hydramnios in the mothers of the infants with esophageal atresia and no fistula. The clinical implications of these findings are discussed.

## Hypertension, Body Weight, and Coronary Heart Disease

G. E. Dimond Arch Intern Med 112:550 (Oct.) 1963

Five hundred twenty-seven railway employees, observed to develop elevated diastolic pressures above 90 on at least two occasions before the age of 50 years between the years 1925 and 1942, were followed up to 1962. Severe, fixed, diastolic hypertension was associated with significantly increased incidence of cerebral vascular accidents, medical disability, and premature death. The incidence of coronary heart disease was not related to the degree of diastolic hypertension, but hypertension adversely effected the prognosis of coronary heart disease. Clinical obesity in this hypertensive group was associated with significantly increased frequency of diabetes, but it was not related to the development of coronary heart disease, cerebral vascular accident, or to longevity.

## Thyroidal I<sup>131</sup> Uptake Patterns Following Iodides

J. T. Taguchi, C. P. Powell, and N. F. Nickerson *Arch Intern Med* 112:569 (Oct.) 1963

I<sup>131</sup> uptake patterns of 23 euthyroid patients were studied at varying intervals after administration of inorganic iodide. Eight of the 23 patients showed abnormalities in the 24-hour I<sup>131</sup> uptake: three showed a "rebound phenomenon"; and five exhibited "prolonged suppression"; one of which was for one year. Exogenous thyroid stimulating hormone temporarily reversed the suppression in two cases.

January, 1964

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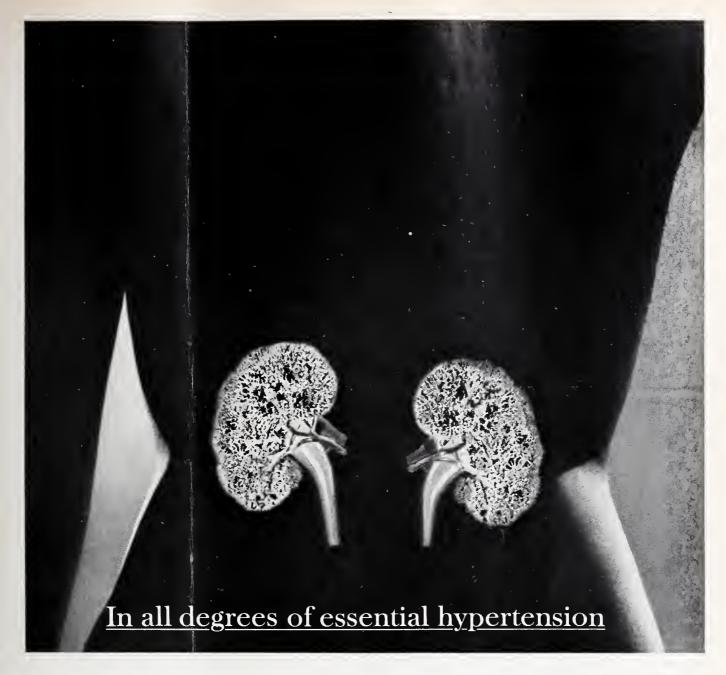


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Res. 4:610 (Dec.) 1962.
(5) Feldman, L. H.: North

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# THE JOURNAL OF THE ATRANSAS MEDICAL SOCIETY

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## RIB FRACTURES AND THEIR COMPLICATIONS\*\*

Ted F. Leigh, M.D.\*

The most common type of fracture in the adult is the rib fracture. The frequency of such fracture is rising, due primarily to the ever increasing number of automobile accidents which cause trauma to the driver and passengers.

The rib may be fractured in one of two ways. There may be direct trauma to one or more ribs with resultant fractures in this same area. Or there may be trauma spread over a broad area, resulting in one or more fractures adjacent to or at some distance from the site of injury (usually by compression of the rib cage).

From the Department of Radiology, Emory University School of

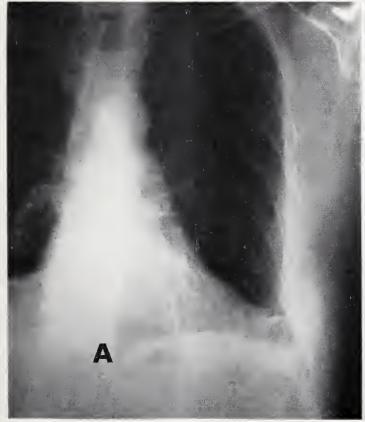
Medicine, Atlanta, Ga.
\*\*Presented at the Eighty-Seventh Annual Session of the Arkansas Medical Society, Little Rock, Arkansas, April 21-24, 1963.

## Technique

The identification of a rib fracture by radiologic examination is dependent on a number of factors, the more important being as follows:

- 1. The position of the fracture in the rib.
- 2. The degree of deformity at the fracture site.
- 3. The degree of mineralization of the rib.
- 4. The degree of air in any lung segment superimposed on the fracture.
- 5. The technical excellence of the examination, including film projections, exposure factors, and others.

The usual routine chest examination, consisting of a frontal and lateral view, in general is not adequate for the identification of most fractured



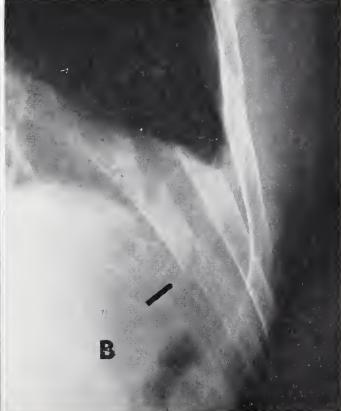


Figure 1

ribs. In the usual frontal view there is considerable foreshortening of the lateral aspect of the ribs, and there is inadequate exposure of the ribs projected below the diaphragm level. In the usual lateral view of the chest, rib visualization is confused by the superimposition of the left and right ribs and the left and right lung.

For a more detailed study of the rib cage than that offered by the routine chest examination, one must resort to additional films. The more important of these include oblique studies of the entire rib cage, spot studies of individual or groups of ribs, and frontal views to show the ribs below the diaphragm level (Fig. 1).

It frequently happens that a fracture will be visible on only a certain number of the films made of a given area, and among the positive films one will usually demonstrate the pathology better than the others.

It occasionally happens that a rib fracture will not be visible at all, no matter how many films of the fracture area are made. This is particularly true when there is no deformity of the rib. In these instances, the fracture will likely be visible after 10-14 days, because of mineral absorption as the fracture edges, and callus formation around the fracture site. When there is strong suspicion of a fracture, and no radiographic evidence of it, one should call attention to the possibility of a hidden fracture and request a repeat examination after an interval of time.

## Complications

Complications associated with rib fracture may result in one of two ways. The jagged edges of the fractured rib may puncture an adjacent structure like the lung, pleura or a blood vessel (Fig. 2). Or the complication may be a result of the trauma itself, with a rib fracture being an indication of the location and the severity of the trauma; examples of this include rupture of the spleen, liver and diaphragm.

The more common types of complications will be discussed from the radiologic standpoint.

Trauma to the Small Blood Vessels. The more common vessels which are lacerated are the intercostal arteries and veins. If bleeding remains localized to the site of injury, there is usually a smooth budge of the pleural shadow inward. The expanded area has tapering upper and lower borders, and is usually maximum in diameter at the level of the fracture. With multiple fractures,

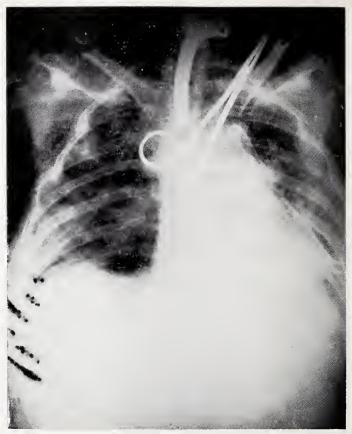


Figure 2

there may be several such prominent areas, or a coalescence of two or more, to give a single mass with lobulated borders.

A localized hematoma may bulge outward into the soft tissues as well as inward toward the lung, but the outward part of such a mass is generally not visible because of its position against tissues of equal density.

Hemorrhage which does not remain localized tends to accumulate by gravity in the more dependent part of the pleural space. Its image on the film is determined by the patient's position during the filming. With the patient upright, small amounts of fluid may cause only blunting of the costovertebral angle. Moderate amounts will surround the lower lung and show as a relative opacity. Massive amounts may cause complete or almost complete opacification of the entire side (depending upon the degree of compression of the ipsilateral lung), and displacement of the mediastinum to the contralateral side.

When there is no associated pneumothorax, and where the patient is in upright position, the upper border of the fluid is seen as an ill-defined meniscus. When there is an associated pneumothorax, and air is present above the fluid, then a sharply defined level is usually seen.

Trauma to the Lung. This may result in intrapulmonary hemorrhage or pneumothorax. When the hemorrhage is the result of the rib fracture itself, the hemorrhage is usually localized to that area. When the pulmonary hemorrhage is the result of blunt trauma, particularly when there is an associated compression of the chest, the pulmonary hematoma may be variable in location.

The pulmonary hemorrhage itself has no distinct characteristics radiographically, but can be suspected if there is a clinical history of injury. It may show as a nodular infiltration or as a segmental consolidation in the lung. Cavitations have been observed at times. Most hematomas have a tendency to regress with time, thus pointing up the importance of progress examinations when the condition is suspected.

Pneumothorax results from perforation of the lung surface, with leakage of air from the lung into the pleural space. The degree of pneumothorax is dependent on the amount of air seepage into the space. Small collections of air can be observed as a homogeneous dark shadow between the rib cage and the slightly collapsed lung. When there is doubt regarding the presence of a pneumothorax, a frontal chest film made in expiration may show a small extra-pulmonary collection of air to better advantage than the ordinary inspiration film. Large amounts of air within a pleural space are easily recognizable. Air under tension may depress the hemidiaphragm on the same side and displace the mediastinal structures to the opposite side. When there is rupture of the parietal pleura, some of the air within a pneumothorax may pass through the rent into the soft tissues of the chest wall, spreading into the muscle planes and spaces of the thorax, and possibly the neck and abdomen as well. Such collections are easily recognizable on chest films, and may give a clue as to the possibility of a rib fracture or pneumothorax.

Trauma to the Spleen. This is a common complication of trauma to the left lower chest or upper abdomen. Indirect signs of such trauma include fracture in the left lower ribs, fluid in the left pleural space, left pneumothorax, and soft tissue deformities, (swelling, irregularities, emphysema). Rupture of the spleen may result from direst puncture by a rib, by the force of the blow, or by a combination of these. Hemorrhage is the all important factor of trauma to this organ.

With diffuse hemorrhage that does not localize, the radiologic picture is variable. Small amounts of blood may cause no abnormal findings on radiological examination of the abdomen. With larger amounts there are likely to be several findings, including evidence of fluid in the midabdomen and in the pelvic fossa, loss of the normal outline of the spleen, (and possibly of the inferior border of the right lobe of the liver), widening of the left flank stripe (due to a collection of blood between the descending colon and properitoneal fat), and adynamic ileus.

With localized hemorrhage in the splenic area, either extracapsular or subcapsular, the radiolgic findings become more diagnostic. There is usually an indentifiable mass which displaces the stomach medially and the colon caudad, and may elevate the left hemidiaphragm. The stomach, in addition to the displacement, may also be acutely dilated and may show deformities along its splenic side; the latter can be demonstrated better in some instances by the administration of contrast media orally.

It should be borne in mind that slow but progressive hemorrhage from the spleen may not become apparent either radiographically or clinically until several days following the trauma, and only at this time may the previously mentioned radiologic manifestations become apparent. In these instances, a comparison between any initial examinations made soon after the trauma and later ones may help in establishing the diagnosis of delayed hemorrhage (Fig. 3).



Figure 3

Trauma to the Liver. This may occur with injury to the right lower chest, but is less common than splenic rupture with left lower chest injury. Again, there may be indirect signs such as rib fracture, pleural fluid, pneumothorax and soft tissue deformities.

Diffuse hemorrhage from the liver presents the same type of radiological findings as those for the spleen, with the right abdomen rather than the left being involved. With localized hemorrhage, the radiologic findings are not as definitive as for the spleen. With the liver being much larger than the spleen in the normal state, there is less appreciation of hematoma formation and displacement of structures such as the right hemidiaphragm, colon, stomach, and duodenum. Intrahepatic hemorrhage—not an uncommon manifestation of trauma to the liver—may show nothing at all on routine examination of the abdomen,



Figure 4

but might be suspected when a gastrointestinal series following trauma is negative in the presence of hematemesis, or when there are abnormal collections of media seen within the liver during cholangiography, either intravenous or possibly T-tube (Fig. 4).

Tranma to the Kidney. The kidney may be punctured by a fractured 11th or 12th rib, or may be ruptured by trauma in the same area. Hemorrhage may be parenchymal, subcapsular, or extra capsular.

The intravenous pyelogram is a satisfactory method of investigation and in most instances will be positive when the kidney has been traumatized. Findings include abnormalities in the contours of the kidney, deformed calyces and pelvis, extravasation or media, and suppression of function.

Trauma to the Diaphragm. Diaphragmatic rupture occasionally occurs with trauma to the chest. A rupture is frequently associated with herniation of abdominal contents, and the immediate recognition of such lesions radiologically is highly important, particularly when there is the possibility of strangulation of a herniated viscus. The rent in the diaphragm is commonly wide. Left herniations are more frequent than on the right (where there is protection offered by the liver). The more common structures that herniate are omentum, spleen, stomach, small intestine and colon.

Traumatic herniations can usually be recognized on routine radiologic examination of the chest by the presence of homogeneous or aircontaining masses in abnormally high positions. The herniated structure, if a part of the gastro-intestinal tract, can further be identified by the oral or rectal administration of contrast media.

Trauma to the Large Blood Vessels. Although any large vessel in the chest may be subject to trauma, those most frequently involved are the aorta and its branches which arise from the arch. The rupture may result from penetration by a fractured rib, or by a sheering action between the portion of aorta which is relatively fixed by the large vessels and the ligamentum arteriosum, and the more flexible portions distal to the left subclavian artery.

If, following an aortic tear, hemorrhage remains localized or accumulates under the adventitia, a chronic false aneurysm may develop. If, under similar circumstances, the hemorrhage does not localize, then there is bleeding into the mediastinum and pleural spaces.

A chronic false aneurysm can usually be seen on routine studies of the chest (Fig. 5). The proper diagnosis can be suspected by the location of the mass and by an associated rib deformities in the same area. A definite diagnosis can be established by angiographic studies (venous angiography, aortography, arteriography, etc.)



Figure 5

Trauma to other Structures. There are other structures in the chest which are subject to trauma by fractured ribs, including the heart, trachea, esophagus, and others. Because of space limitations, these will not be discussed in detail, but do deserve mention.

## Summary

Rib fracture is the most common type of fracture in the adult.

Radiologic examination is the best method of identifying rib fracture and the complications arising either from the fracture or the trauma associated with it.

The identification of a rib fracture is dependent on a number of factors, including the technique of examination, location of the fracture, degree of deformity, and others.

The main complications resulting from rib fracture and trauma include injury to the blood vessels of the chest (both large and small), injury to the hing, spleen, liver, kidney and diaphragm; each of these is discussed in some detail. Other structures which may also be traumatized but are not discussed here include the heart, trachea, esophagus, and others.

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#### LEGENDS FOR ILLUSTRATIONS

Fig. 1. Rib fracture in a 61 year old male who injured his left lower chest in a fall. The routine PA chest examination (A) did not disclose any fractures, but one or more were suspected because of the presence of a small amount of fluid (blood) in the left pleural space. An oblique examination with heavier penetration disclosed a fracture in the 8th rib (arrow).

Fig. 2. Multiple complications in a 54 year old woman who sustained a compression injury of the chest in an automobile accident. This AP chest examination, made with the patient in recumbent position, disclosed multiple injuries, including laterally placed rib fractures (typical of sagittal compression of the chest), pulmonary and pleural space hemorrhages, and soft tissue emphysema. There is visible evidence of treatment for the injury, including tracheostomy and bilateral intubations.

Fig. 3. Sever chest trauma in a middle aged female, with delayed clinical and radiological findings of splenic rupture. This examination of the upper abdomen, made 9 days following the accident, discloses a large mass in the left upper quadrant, causing caudad displacement of the splenic flexure of the colon, and medial displacement of the stomach (shown by the gastric tube and air in the stomach to the left of D12, L1 and 2). The initial examination of this area had shown no mass in the left upper quadrant.

Fig. 4. Traumatic rupture of the liver in an 11 year old boy who sustained trauma involving the chest, right shoulder and upper abdomen. Exploration revealed a laceration and a hematoma of the liver which was drained. Later, a T-tube cholangiogram disclosed an irregular area of filling in the left lobe of the liver, interpreted as being an area of intrahepatic hemorrhage.

Fig. 5. Traumatic aneurysm of the aorta in a 39 year old female who sustained chest injuries in an automobile accident 5 years before. A mass projects from the left side of the mediastinum, and proved at operation to be a false aneurysm arising from the aorta near the origin of the left subclavian artery. Several of the upper left ribs are deformed as a result of the previous trauma.

## THE RURAL HEALTH MOVEMENT\*

Ben N. Saltzman, A.B., M.A., M.D.

Executive Cammittee Council on Rurol Health American Medical Association

N ORGANIZED RURAL HEALTH MOVEMENT in the United States was begun some eighteen years ago when Mrs. Charles Sewell of Otterbein, Indiana, a leader in the American Farm Bureau Federation, approached leaders in the American Medical Association with a request and a plan. She informed them that health conditions and medical care for rural people were not as good as that provided inhabitants of our cities and that it was time something was being done about it. The farm organizations, the agricultural extension services and other groups had health committees but there was no organized plan or procedure available. A shortage of hospitals, doctors, nurses and public health facilities existed in rural areas and there was a decided lack of knowledge on how to make the best use of those facilities that already existed. Mrs. Sewell suggested that the American Medical Association, representing the physicians of this country who should be most interested in health, call together a meeting of physicians and farm leaders to outline plans for helping rural people help themselves to better health.

This meeting resulted in the formation of a Committee on Rural Health later to become the Council on Rural Health of the American Medical Association. An Advisory Committee was also formed consisting of members who were official representatives of several great national farm, educational, research and informational organizations whose interest was centered in agriculture as an industry, a vocation and a way of life.

Organizationally, the Council on Rural Health is a section within the structure of the American Medical Association dedicated to providing better health to the rural public. The Council consists of ten regional directors with a Chairman elected from its membership. The ten directors are appointed from ten agricultural regions in the United States and are practicing physicians in those areas. The Council has adopted as its unofficial motto, "Helping the Community to Help

Itself to Better Health." Working with its Advisory Committee its efforts have been primarily educational.

Since the origin of the Council, sixteen National Rural Health Conferences have been held over the United States. There have also been numerous Regional Conferences. These meetings have been held where the greatest number of farm people could be reached. In addition to rural people, those in attendance have been agricultural, medical, educational and religious leaders and others interested in rural health. The Conference programs have consisted of whatever was of timely interest. The Conferences are of the Forum type, the Council on Rural Health acting only as sponsor and host. Discussion from the floor is the rule. No decisions are made and no votes are cast. The Conferences have served for the exchange of ideas, recitation of experiences and the making of suggestions and recommenda-Nothing of a controversial nature is brought to the floor if possible. If presented, such items are set aside for later consideration and sober judgment. Persons or organizations are not required to adopt the ideas presented. Their own convictions need not be modified in any way.

Subjects discussed in previous Conferences have been: physician procurement, hospital procurement, budgeting methods for meeting hospital and medical expenses, voluntary health insurance, rural and environmental sanitation, rural safety programs, nutrition, effect of soils on human and animal nutrition, animal diseases related to man, child welfare programs, mental health programs and countless others. Speakers have been national leaders in their own fields.

It is my feeling that these Conferences have immeasurably benefited those in attendance. The open discussion, the presentation of new ideas, the repetition of fundamental ideas, have all served to help both rural leaders and educators bring back to their communities practical programs for the improvement of rural health. However, most important to me has been the planning of these conferences. The opportunity to work with the people on the Advisory Committee has

<sup>\*</sup>Presented to Conference of Public Health Veterinarians, American Public Health Association Annual Meeting, November 14, 1963, Kansas City, Missouri.

provided a revelation in human understanding. I have been fascinated by the scope of knowledge made available to me by these national leaders. I have watched people in unrelated fields combine their interests toward the purpose of providing ideas for conference material.

In 1958, two members of the profession of Veterinary Medicine were appointed to the Advisory Committee. They were Dr. J. L. McAuliff of Cortland, New York and Dr. Martin P. Hines, Chief of the Veterinary Public Health Section of the North Carolina State Board of Health. These men have contributed greatly to the success of many conferences. Dr. Hines has appeared on Conference programs and in 1961 wrote a treatise on Rural Health Problems in the United States requesting assistance of all Veterinarians in the country towards furthering the program outlined. This was a classic in its field and is widely quoted by interested physicians over the country. I have enjoyed my association with Dr. McAuliff and Dr. Hines. From them I have learned a great deal about Zoonotic diseases, the uses and hazards of feed additives, antibiotics and hormones in the production of meat and milk, and farm safety. These men were invaluable to the Council in planning for a recently held National Rural Safety Conference sponsored jointly by the Council on Rural Health and the National Safety Council. Through the help of these men, the Council recently enjoyed a dinner meeting with the officers of the American Veterinary Medical Association and learned to appreciate these men as scientists and human beings.

Learning to know these men as colleagues in the field of rural health has helped me understand their problems. When one becomes knowledgeable in a subject, he is often regarded as an expert in that same field. Recently Dr. Tom Eagle, a practicing Veterinary Physician and Past District Governor of R. I. in Kansas City, wrote me in my capacity as a Director of Rotary International seeking my support in making Veterinary Medicine a major classification in Rotary rather than a sub-classification under Animal Husbandry. When this matter came to the board, I was able to speak with authority on the subject, and Veterinary Medicine became a major classification. In addition, it was given three subclassifications which included, Veterinary Practice, Research and Public Health.

The holding of National and Regional Rural

Health Conferences is not the only work of the Council on Rural Health. It encourages State and County Medical Societies to activate Rural Health Committees. It encourages the formation of State and County Rural Health Councils or Advisory Committees to act on those levels. The Council collects and distributes information pertaining to rural health. This information is acquired from many sources, both governmental and private. Distribution is effected through the various State Medical Societies and through articles published in many farm publications. The Council provides informational kits of material which are available to anyone interested. Counseling between county and state farm organizations and medical societies are encouraged. Rural Health Conferences on county and state levels are also encouraged. My own interest in rural health began with my appointment on a State Committee and my participation in a State Rural Health Conference.

September, 1963 was the month in which the Council held its largest National Rural Health Conference since its origin. The site of the Conference was Hot Springs, Arkansas. This is my own state and our State Committee was responsible for attendance promotion. We had learned to work together over the years and making this conference a success was a completely joint effort. We enlisted the help of all the voluntary and State health agencies on the basis of community cooperation and the task became an easy one. Our program was interesting and diverse. We discussed the question of who shares the health dollar by asking speakers to represent their own organizations on this matter. We heard from the Pharmaceutical Manufacturers Association, the American Medical Association, the American Dental Association, the Hospital Administrators and the Voluntary Insurance Agencies. Newer Concepts and Challenges in Mental Health were discussed by the Director of the National Institute of Mental Health and by a practicing psychiatrist. Self-Help Methods of Value for the Prevention of Dental Disease were discussed by a Professor of Dentistry. A practicing physician discussed common errors in emergency treatment prior to seeing the physician. The subject of Immunization, a matter now receiving concerted attention from the American Medical Association, was discussed by the Chairman of the Council on Rural Health, Dr. W. Wyan Washburn. Dr. James H. Steele,

Chief of the Veterinary Public Health Service of the Communicable Disease Center in Atlanta, Georgia discussed Animal Diseases Transmissible to Man. A small Arkansas Community presented its activities in community health under a Rural Community Improvement program in the state. The entire program was well rounded, and over six hundred participants got into the act. The Council plans to continue its annual Conference and will hold its next one in Columbus, Ohio in March, 1964.

The Council on Rural Health realizes that the United States is the healthiest large nation in the world. It also realizes that in past years rural living has caught up with urban living and in some instances has surpassed it from the standpoint of health. However, it also realizes that there is still considerable room for improvement. The small successes we have had over the years have been due to active participation by all the interested organizations and agencies. We must continue to work together to discover defects in local health programs and facilities. We must develop a program to effect remedies. We need even closer cooperation and greater mutual trust. The medical profession in the past held aloof from other groups. Through the Council on Rural Health we have found that we can work well together. It is our hope and endeavor that local medical societies will take an active interest in promoting closer and better relations between the interested groups and their communities. It is only on the "grass roots" level that cooperation can be effective.

Working together we must try to make greater and more effective use of the health organizations, agencies and services which already are available. This can be achieved by the establishment of counseling structures on the pattern of the Advisory Committee together with an adequate educational program.

It is our feeling that the use of educational scholarship funds for training physicians, nurses and technicians might well be useful in many areas. Interested groups working together could well set up such funds. This will be necessary to bring rural youth back to the rural community.

Educational programs must be provided for the public on such subjects as nutrition, safety, sanitation, better soils, animal diseases, roads, telephones, etc. We must emphasize that there are the preventive aspects of health, and involve personal and community responsibility that no

amount of medical care and facilities can supplant.

One of the major efforts of the American Medical Association in recent years has been to help communities needing a physician to obtain one. This effort is a continuing one because the need will never be completely satisfied. The people of the communities must learn that they must take the initiative and make their community an attractive place in which to live. The turnover of physicians in non-interested communities is great. Small communities must learn to share physicians. Clinical facilities provided in a centrally located area for county-wide coverage may be the answer.

It is the considered opinion of the American Medical Association that enrollment of rural people in pre-payment sickness and hospital insurance plans are vital to the health of communities, even though special problems are presented. Representatives of farm organizations and groups together with persons interested in and conversant with insurance matters should study these problems. A special effort should be made to develop insurance plans suitable for rural people and devise techniques for their enrollment. The American Medical Association and the State Medical Societies are continuing to study plans and have worked with many groups attempting to present something practical and suitable.

In summary, I can safely say that progress has been made and is being made in rural health. However, much remains to be done. More community counseling, more intensive health education programs, more rural hospitals and clinics and more doctors, nurses and dentists are needed in rural areas. These are the goals of the Council on Rural Health. These are the goals of the organizations participating on the Advisory Committe. Therfore, these are also the goals of everyone in attendance here. Thus everyone must help achieve these goals. The American Medical Association, its Council on Rural Health, the rural organizations, the state and county medical societies and individual physicians have a deep interest in and responsibility for improving health and medical care. We do not claim a privileged position in the rural health movement. We got into it through the stimulation of others. We now try to stimulate others to work with us. We are available to serve and to aid those seeking assistance. The American Medical Association and the Council on Rural Health asks you to "Help Us To Help Others To Better Health."

## THE COMMON VAGINITIDES\*\*

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Approximately one-third of women of child-bearing age currently have one or more types of vaginitis. The two most common of these infections, *Trichomonas vaginalis* vaginitis and *Hemophilus vaginalis* vaginitis, must be considered as venereal diseases, and each is one hundred times more common than gonorrhea in a private office practice. Vaginal monifiasis is also common, but is not a venereal disease. *Candida albicans*, the usual causative fungus, inhabits many normal vaginas, as well as intertriginous areas of the body and the intestinal tract.

A few years ago in Houston<sup>1</sup> over 3,000 unselected patients from various socio-economic levels were screened for vaginitis. It was found that 23 per cent of white patients in one private office practice and 78 per cent of Negro gynecology patients in the county charity clinics were infected. If the fears, the resulting psychosexual maladjustments, physical discomforts, and even shame the patient suffers are taken into account, it is no exaggeration to state that vaginitis causes more unhappiness and mental suffering on this earth than does all genital cancer. Practically every infectious vaginitis is attributable to a specific pathogen, and recognition is prerequisite to any consideration of therapy. A correct diagnosis is particularly easy when the clinical characteristics are recalled and are correlated with the microscopic findings.

That cervicitis is a more common cause of leukorrhea than vaginitis is an error perpetuated from author to author. The nature of the discharge from cervicitis usually makes it of little concern to the patient because of the almost complete absence of physical irritation or disagreeable odor. I question the existence of a relationship between vaginal pathogens and cervicitis, and no proof exists that the cervix is a reservoir of infection for the vagina or that cervicitis ever predisposes the vagina to the common vaginal pathogens. In other words, vaginitis and cervicitis are mainly independent, and the treatment methods are unrelated.

## **Monilial Vaginitis**

The term "vulvovaginitis" would be more appropriate for this infection because of the usually severe reaction in the vulvar skin. Any patient with a marked pruritus, redness and edema of the vulva, and characteristic thrush patches of the vaginal wall can be assumed to have vaginal moniliasis. It is the patient who has minimal evidence of vulvitis and who has no thrush patches on the vaginal wall who is likely to be misdiagnosed. I should like to emphasize that less than 50 per cent of women with monilial infections sufficient to cause subjective symptoms show evidence of thrush patches. Any patient who complains of pruritus, has typical redness of the vestibule, and shows only normal epithelial vaginal secretion should be suspected of having moniliasis. Conversely, the incidental finding of the spores and filaments of Candida in a patient without gross evidence of infection and without pruritus does not justify the diagnosis of clinical disease or the institution of treatment.

It is common to see moniliasis after prolonged broad-spectrum antibiotic therapy, a fact which would necessarily mean that the organism was being harbored by the patient. Why Candida flourishes and produces clinical disease under the influence of antibiotics is a point of controversy, and space does not permit its discussion here.

### **Trichomoniasis**

Vaginal trichomoniasis, because of its symptoms, high incidence, and resistance to treatment, must be considered the most important vaginal infection. The majority of those concerned with trichomoniasis have been too slow in recognizing that it is not limited to the vagina, but instead is a disease also of Skene's ducts, the urethra, and the innumerable paraurethral glands of the patient, as well as the urethra and paraurethral glands of men. This simple fact adequately explains the frustrations which befall clinicians who are able only temporarily to "cure" trichomonas vaginitis.

Practically every patient who yields vaginal trichomonads has, has had, or will have acute vaginitis. The majority keep symptoms in abey-

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<sup>\*\*</sup> Presented before the General Session of the Arkansas Medical Society, April 23, 1963.

ance by frequent medicated or acid douches. While the douches have no curative properties, they do provide some comfort for the patient. Patients who are asymptomatic, that is those who harbor trichomonads but have no objective or subjective evidence of disease, will frequently develop acute infection when the physiologic status of the vagina has been altered, as from childbirth, illness, and prolonged bed rest. It is hard to describe the characteristic findings of this disease because the gamut runs from the asymptomatic, with normal-appearing tissues and vaginal secretions, to the most acute inflammatory changes of the vulva and vagina, associated with the worst of pruritus and the foulest of discharges. The reasons for this wide range of clinical manifestations are numerous and varied and not fully un-

There are several clues which individually suggest trichomoniasis and which if all were present together might be considered as pathognomonic. For example, if the discharge is foul, markedly frothy, homogeneous in consistency, extremely profuse, and of a greenish cast, and if the vagina has swollen papillae and ecchymoses, trichomonads will be recoverable.

## Hemophilus Vaginalis Vaginitis

H. vaginalis vaginitis is a specific disease entity which is caused by a short Gram negative bacillus of the genus *Hemophilus*. While the tissues of the vulva and vagina rarely, if ever, show gross changes, the resulting disagreeable leukorrhea can be differentiated from that of trichomoniasis only by laboratory means. Clinically, there is a characteristic gray, homogeneous, malodorous discharge, with a range of pH 5.0 to 5.2. The discharge, unlike that of trichomoniasis, remains essentially unchanged from week to week and year to year. The disease is acquired mainly by sexual contact, and for this reason must be classified as a venereal disease. Over 90 per cent of the husbands of infected wives harbor the organism as the predominant bacterium of the urethra. The infection is easily transmitted to a healthy vagina by inoculation with material from an infected vagina (observed in 11 of 15 such direct inoculations).2 Within a week the vaginal secretions in the normal patient will change from epithelial to homogeneous, from normal to odorous, and from slatecolored to gray. The acidity will change from a normal of about pH 4.0 to an abnormal of about pH 5.0, and the laboratory findings change simultaneously. I reiterate that the discharge from *Hemophilus* vaginitis cannot always be differentiated from that of trichomoniasis, except by laboratory means. It is not uncommon to see patients who have been treated for years unsuccessfully for "trichomoniasis" respond promptly to appropriate treatment for *Hemophilus* vaginitis.

## Laboratory Diagnosis of Vaginitis

Wet Mount—If I were limited to a single laboratory method for the differential diagnosis of vaginitis, I would use the wet mount prepared by mixing a droplet of vaginal material with a drop of physiologic saline on a glass slide and cover slipped. The use of both high power and low power magnifications of the microscope is suggested. The expert can easily detect the spores and filaments of Candida infections, and in these infections pus cells are usually rare to moderate.

Trichomonads, slightly larger than pus cells, are easily detected by their characteristic motion and morphology. Heavy fields of pus, a large variety of bacteria, and a large number of immature epithelial cells, singly or collectively, are of diagnostic significance. The microscopic appearance of H. vaginalis on the wet mount is characteristic and, with some experience, infection from this agent can be diagnosed with considerable accuracy by this method. As in normal vaginal secretions, the numbers of pus cells are relatively small. Lactobacilli are conspicuously absent. Large clumps of Hemophilus organisms can be seen floating freely in the saline solution. The most typical finding is the granular or stippled appearance of some of the epithelial cells resulting from adherent uniformly-spaced Hemophilus organisms upon the surface. These affected epithelial cells have been referred to as "clue cells."2 Not all epithelial cells show this change, and the entire surface of the affected cells is not always involved. Such organisms as diphtheroids and certain cocci sometimes adhere to epithelial cells to produce a similar picture; however, the experienced eye can differentiate without too much difficulty. The trained technologist, without knowledge of the clinical picture, can make a correct diagnosis of Hemophilus infections in well over 90 per cent of specimens examined. Any patient with a gray, homogeneous, and odorous discharge without trichomonads, and who shows instead the characteristic "clue cell" can be considered as having Hemophilus vaginalis vaginitis.

Stained Smear-If the wet mount preparation

were not available, then the stained smear would be the best method for differentiating the various infectious vaginitides. The Gram stained smear is preferable. The spores and filaments of Candida are easily found and cannot be confused with other agents. For the occasional observer, the stained smear is more accurate for the diagnosis of moniliasis. The predominant associated bacteria are usually lactobacilli or diphtheroids. The stained smear is no substitute for the wet mount in the diagnosis of trichomoniasis. Trichomonads are dillicult to identify in the Gram stained smear, and with the wet mount available, special staining techniques are not justified. Trichomoniasis can be suspected in the Gram stained sinear by the large number of pus cells, the highly mixed bacterial flora, and the usual absence of lactobacilli. Hemophilus vaginalis vaginitis is easily diagnosed on the stained smear because of the large number of characteristic short Gram negative bacilli. The fields are heavy with this organism which usually outnumbers any other bacterium 100 to I. While certain small diphtheroids can be confused, diphtheroids are Gram positive organisms, and Hemophilus vaginalis is Gram negative. Again, there is a paucity of pus cells and an absence of lactobacilli.

Culture—As previously stated, cultures are hardly necessary in the differential diagnosis of the specific vaginitides, particularly if close correlation is demonstrable for clinical and microscopic findings. Although culture techniques are frequently essential in research or in determining absolute cure rates in drug evaluations, they are only rarely indicated in clinical practice. A commercially available medium for growing Candida at room temperature is Pagano-Levin (E. R. Squibb & Sons). A positive smear or culture does not necessarily mean that the patient has clinical disease, because Candida species are common inhabitants of normal vaginas. It is only under certain favorable environmental circumstances that clinical disease is manifested. Trichomonas cultures are valuable in research but seldom necessary in clinical practice. Simpified Trypticase Serum Medium With Base: B.B.L., Catalogue number 01-474, is used. To this must be added human serum and a mixture of penicillin and streptomycin for inhibition of bacterial growth. Hemophilus vaginalis can be cultured only under the most exacting techniques, which are well described elsewhere.3 From a purely practical standpoint, *Hemophilus* cultures are nunccessary if the clinical findings are correlated with the wet mount and stained smear findings.

### pH Findings Important

Using pHydrion paper (W. H. Curtin and Co.) the pH of vaginal discharges can be determined with sufficient accuracy for clinical significance. This is a very simple test, rapidly performed and at negligible cost. It is a test which, with clinical and microscopic lindings, assists greatly in the differential diagnosis of vaginal infections. A pH 5.0 or greater in a woman in the child-bearing age, who is neither postpartum nor postabortal, signifies trichomoniasis or Hemophilus vaginitis. A pH 3.8 to 4.7 is indicative of normal vaginal secretions or moniliasis. Postmenopausal patients in whom the glycogen and lactic acid contents are low yield a relatively high pH, usually 5.0 or greater, and this holds true also for premenarchal children.

## **Treatment of Specific Vaginitis**

Moniliasis-For moniliasis there are numerous fungicides from which to choose, none with spectacular advantages over another. While gentian violet solution provides immediate remission of symptoms, chemical vulvovaginitis is likely to result if the applications are made oftener than every three days and if the solution is stronger than one per cent. While this messy drug is efficacious, its use is hardly justified with other effective agents available. Nystatin, an anti-fungal antibiotic, developed specifically for candidal infections, is comparable to any preparation now available. It is conveniently marketed under the name Mycostatin® Vaginal Tablets. Regardless of the preparation used, shortness of periods of prescribed treatment or immediate discontinuance of treatment by the patient upon relief of subjective symptoms explains many treatment failures. Most preparations should be inserted into the vagina once or twice daily for 30 days. For patients who have frequent recurrences, I recommend this routine: application of a lungicidal ointment such as Mycostatin to the vulva after the daily bath for an extended period; twice daily application of fungicidal ointment for seven to ten days to the husband's penis; sterilization of douche apparatus; use of the shower, instead of the tub; prophylactic fungicides in the vagina during the course of any antibiotic therapy; and exclusion, by the physician, of active or latent

diabetes as a presdisposing factor.

Since the intestinal tract is probably the most common source of reinfection, consideration should be given to lowering its fungus population by the use of oral Nystatin, 500,000 units, three times daily for 10 days.

Trichomoniasis—Most of the hundreds of available topical agents can temporarily eradicate all vaginal organisms, restore tissues to normal, and relieve symptoms, but the vast majority of patients with "apparent" cures from these methods will ultimately have recurrences. My experience suggests that the most effective topical agents contain an arsenical. Two of these are Neosporin® Vaginal Suppositories (containing aerosporin, neomycin, and acetarsone), and Devegan® Tablets which also contain acetarsone. Trichofuron® Suppositories, Improved, contain the trichomonacide Furoxone® and are locally effective. Regardless of the topical agent, it should usually be inserted once or twice daily for at least 30 days and it should be used during menstruation. The husband should use condoms for several months because of the probability that he harbors the organism. Except for the systemic agents, there is no method of eliminating organisms from the urethra of either sex, and for this reason relapses can be expected.

In recent years, much work has been directed towards development of systemic agents which will eradicate trichomonads from the host. Until recently, the most promising was Tritheon® (Ortho) but its clinical efficacy has been disproved.4 Finally, in 1959, Durel5 reported clinically successful results with metronidazole (Flagyl®). This is the first real breakthrough in therapy, and its efficacy has been confirmed by many investigators. In my own experience with Flagyl in over 200 patients, the primary cure rate is well in excess of 90 per cent. My regimen has been 500 milligrams (2 tablets) every 12 hours, for five days. Another dosage schedule popular with other investigators has been 250 mg. three times daily for 10 days, and still others have used 500 milligrams daily for 10 days. In my opinion, a daily dosage of less than 750 milligrams should be discouraged, because of the possibility of developing therapeutic resistance. The effects of the agent are dramatic. The patients show no trichomonads alter two or three days, and the gross signs of vaginitis and the symptoms rapidly disappear. Inasmuch as husbands are likely to be carriers, it is my opinion that they should be treated simultaneously. Failure to do this and failure to prescribe adequate dosage surely involve the risk of precipitating therapeutic resistance to a drug which is highly effective.

Hemophilus Vaginitis—This specific disease entity is associated with few, if any, gross tissue changes and subjective symptoms, but has a uniform clinical pattern. This infection can usually be cured by intravaginal use of sulfonamides twice daily for ten days, Sterisil® Vaginal gel, once daily for ten days, or Terramycin® Vaginal suppositories once daily for ten days. Inasmuch as 90 per cent of husbands of infected wives yield H. vaginalis and thus constitute a source of reinfection, they must be treated simultaneously if frequent recurrences are to be avoided. The tetracycline group of antibiotics are the most effective; however, adequate dosage is mandatory (for example Achromycin®, 250 mg. every 4 hours for 4 or 5 days).

### **Nonspecific Vaginitis**

The term "nonspecific vaginitis" is a misnomer. In my experience, over 90 per cent of vaginitides previously considered as "nonspecific" are caused by H. vaginalis. The majority of the others have been attributed to streptococci, staphylococci, Proteus, pseudomonas, etc. but the etiologic relationship of these organisms is perhaps dubious, and their clinical patterns are not individually characterized. Predominance of one of these bacteria in a culture or smear does not necessarily prove its etiologic role. Their occasional predominance frequently represents only a temporary imbalance of llora from altered physiology, antibiotic therapy, etc. Expectant treatment is usually all that is required, because, ordinarily, time will allow for the return of a normal flora and the need for active treatment will be obviated. If specific antibacterial therapy is ever considered necessary, sensitivity tests should precede use.

## **Atrophic Vaginitis**

In a postmenopausal patient, thinning of the vagina *per se* does not constitute vaginitis. Diagnosis of senile or atrophic vaginitis is justified only when the vagina is markedly thinned and unusually susceptible to excoriations and petechiae. Specific pathogens are usually not involved and Monilia and trichomonads do so poorly in the

postmenopausal vagina that they rarely cause clinical disease. Their consideration, however, is necessary. It is usually a waste of effort to attempt identification of a predominant bacterial organism because to do so does not prove its etiologic relationship to the vaginal state.

Atrophic changes when no symptoms exist require no treatment. If pruritus, discharge, and marked atrophy are noted, active treatment must be considered; however, it is first necessary to rule out a primary dermatologic condition or specific pathogen. Once a diagnosis of senile vulvovaginitis is established, local application of one of the many estrogen-containing topical agents is usually all that is required. A 0.1 to 0.5 mg. suppository of Stilbestrol every other night is effective. Premarin® vaginal cream (containing sodium estrone sulphate) applied with an applicator is very effective. Local estrogens need be used only until desired gross changes have been obtained, with subsequent regressions handled according to the needs of the individual patient. Applications once or twice a week are usually adequate to maintain a mature epithelium, and this is sometimes desirable. Systemic estrogens should rarely be used because of the possibility of undesirable endometrial bleeding with its more serious implications.

### **Childhood Vaginitis**

Low estrogen levels in childhood, as in the postmenopausal patient, allow for a thin vagina which is occasionally subject to low grade bacterial infection. As in the postmenopause, candidal organisms, trichomonads, or *Hemophilus* are seldom etiologic agents. In contrast to condition 30 or 40 years ago, childhood vaginitis today is rarely attributable to the gonococcus, which probably accounts for less than five per cent of

cases in charity clinics and less than one per cent in private patients. The mere finding of Gram negative intracellular diplococci in the vagina of a child who supposedly has leukorrhea should not be interpreted to mean gonorrhea, especially if the classical clinical picture is not afforded. A child should never be indicted as having gonorrhea without culture confirmation.

Chemical irritants, pin worms, and foreign bodies should be considered as causes of childhood vulvovaginitis. It has been my experience that most of the so-called childhood "leukorrheas" can be explained by maternal apprehension, increased secretions from early ovarian activity, uncleanliness, or mechanical irritation, and only rarely to microbial agents. If the vaginas of these patients are cultured the predominant bacterial organism cannot necessarily be considered the etiologic agent because that role is difficult to prove except in the case of the gonococcus.

Children with gonorrhea are treated by adequate doses of penicillin, and those with other infectious vaginitides are treated by the specific agents already discussed. The majority, however, require little more than external cleanliness and maintenance of a dry vulva. Intravaginal estrogens, sulfonamides, or antibiotics are occasionally justifiably used to alter the vaginal flora or physiologic status of the vagina.

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## Vasodilators in Cerebral Vascular Insufficiency

J. F. Fazekas and R. W. Alman, Amer J Med Sci 246:410 (Oct) 1963

Basic hemodynamic considerations indicate that pharmacological agents which have a vasodilator action upon the entire peripheral circulation are unlikely to improve the cerebral blood supply and may even affect it adversely if cerebral vascular disease is present. Similarly, agents which cause respiratory stimulation or otherwise tend to produce an increase in cerebral vascular resistance will decrease cerebral blood flow, even precipitating cerebral ischemic symptoms in some cases. Carbon dioxide inhalation and intravenous acetazolamide have been demonstrated quantitatively to cause a significant increase in cerebral blood flow, but are not invariably effective in cerebral vascular disease, nor has their clinical value been established.

## TEACHING SEMINAR

University of Arkansas Medical Center Little Rock, Arkansas



## THE CURRENT STATUS OF PHEOCHROMOCYTOMA

James Wilson, M.D.

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IGH BLOOD PRESSURE, BECAUSE of its prevalence in humans and its association with pathologic alteration of human structure and functioning, is of fundamental interest to physicians. The major part of this entity cannot be explained or treated satisfactorily and its course in an individual cannot usually be predicted with any appreciable degree of certainty. Because of these facts, the primary processes which are known to produce blood pressure elevation assume added importance. The pathophysiology involved sheds light on the variety of mechanisms which may operate to raise blood pressure inappropriately. In addition, reversibility of the pathologic process depends largely on the identification of a primary cause. As more of these primary causes are identified and as our ability to recognize them improves, essential hypertension will disappear as a clinical entity. Unexplained elevation of blood pressure can then be viewed as a sign idicative of an undiagnosed abnormality.

These statements are meant to serve as a preamble to a discussion of the current status of an important cause of high blood pressure, pheochromocytoma. Every physician is familiar with the euphonious name of this tumor and with its classical forms of expression. So many cases have been reported and the literature reviewed so often that an apologetic tone can now be detected in most recapitulations. This is the result of the low reported incidence of pheochromocytoma, usually estimated as causing about 0.5% of all hypertension. Nevertheless, the subject continues to be important because of potential curability. There

is also good reason to believe that the true incidence is significantly higher than has been appreciated. Perhaps the highest reported incidence was found in the course of performing sympathectomy on a selected group of hypertensives. Most other series are based on an operative confirmation of positive pharmacologic tests. Now that better methods for diagnosis are available, the occurrence of false negative and false positive pharmacologic tests is better appreciated. Pheochromocytoms vary widely in symptomatology. They mimic other diseases which are much more common. They are closely associated with sudden fatal events such as myocardial infarction and cerebro-vascular disorders which are not usually investigated further. They may predispose the development of other diseases such as thyroid carcinoma and pyelonephritis which mask the presence of pheochromomytoma. The number found adventitiously at surgery or autopsy, or because the tumor has enlarged enough to become noticeable, emphasizes the difficulty of recognition and adds to the impression that true incidence is not known.

The necessity for identification of pheochromocytoma has led to a number of practical problems. The presenting features are quite variable. It is probably more important to emphasize the various guises and associations than to describe the classic expression. Diagnostic tests must be kept in perspective. Medical management of the person with pheochromocytoma must take into account the continuing accumulation of knowledge of pathophysiology.

#### Characteristics

Pheochromocytoma is a tumor which stains a dark color (brown) with chromium salts. The primary tumor may occur wherever chromaffin tissue, an ectodermal derivative, is found. More than 90% of those reported have been found to originate in the adrenal medulla. There is about a two to one predilection for the right adrenal and approximately 10% are bilateral or multicentric. Most extra-adrenal pheochromocytomas are intra-abdominal and near the aorta. They have been reported rarely in the thorax, in brain substance, within the parenchyma of the kidney, in the urinary bladder, etc. In the great majority of cases, the tumor or tumors are located in one region, where initial exploration is directed.

These tumors produce epinephrine and its biological precursor norepinephrine in variable proportions when found in the adrenal medulla. Extra-adrenal chromaffin tissues does not methylate norepinephrine efficiently and consequently does not produce significant amounts of epinephrine.<sup>9</sup> This chemical characteristic can be of aid in localization.

Pheochromocytoma occurs at all ages but is most common in early adult and middle life. The sexes are equally affected.

The size of the tumor may vary from microscopic to 18 cm. in diameter. The most frequently occurring size corresponds to that of a lemon.

The characteristic feature of the tumor is a polyhedral cell, larger than that found in normal adrenal medulla, and exhibiting a finely granular cytoplasm. Aggregates of these cells are separated by a thin connective tissue stroma which is highly vascular. Although malignant in less than  $10^{\circ\prime}_{0}$  of the cases, the histologic picture is uniformly anaplastic, showing marked cellular dedifferentiation. Malignancy is a judgment based on behavior of the tumor (i.e. invasiveness, metastasis).

The possibility has been raised that hyperplasia of the adrenal medulla might produce physiologic abnormality similar to that caused by a tumor. Such an occurrence would parallel what is seen in other endocrine organs. This line of thought probably furnished the rationale for doing subtotal adrenalectomy on persons with severe essential hypertension. This procedure lost its popularity because results were uncertain. To our knowledge, there is no report that any of the persons who were dramatically improved actually had adrenal hyperplasia. A case has recently been reported however, which seems to qualify.<sup>14</sup> A

patient with clinical, pharmacological and chemical evidence of pheochromocytoma was found to have only a slightly enlarged left adrenal. A section appeared hyperplastic with vacuolated cells. After removal of this gland, the patient reverted to normal in all respects. We have observed a similar case which will be reported when sufficient postoperative followup is gained.

Although related in location and function, adreual cortical elements have different embryologic origin. Nevertheless, isolated occurrences of tumors containing both elements have been reported. One such tumor, removed from the suprarenal area, resembled a pheochromocytoma histologically except for lipid containing cells. Assay revealed excess catecholamines and the tumor released a compound in vitro which had the chromatographic characteristics of cortisol.<sup>15</sup>

As with numerous other new growths, definite etiology is not known. There is evidence that pheochromocytoma is an inherited abnormality. Cushman reviewed ten separate lamilies previously reported with multiple involvement with pheochromocytoma and added two more families to the literature.<sup>5</sup> He also expanded the association of pheochromocytoma with multiple endocrine tumors. One patient had a pheochromocytoma, a parathyroid adenoma and a thyroid carcinoma. His son had a phechromocytoma and a thyroid carcinomo. The son's eldest daughter in turn had a thyroid carcinoma. It has been concluded that chromaffin tumors are inherited in a dominant genetic fashion. In a group of affected families, there was found to be a 56% incidence at multiple sites.3 Multiple neurofibromatosis, a frequently asociated finding, is a dominantly inherited abnormality which arises through mutation at one of the most frequent rates in man. This suggests that sporadic as well as familial pheochromocytoma may arise from mutation.

### **Clinical Features**

The symptoms and signs of pheochromocytoma are produced by the secretion of epinephrine and/or norepinephrine into the circulation. Both of these substances elevate blood pressure but by different mechanisms. Their other effects are quite different. The relative and absolute amounts of each substance, the frequency of their discharge, and the reaction of the patient all affect the clinical picture.

Epinephrine is an overall vasodilator substance even though vasoconstriction is produced in skin, mucous membranes, and splanchnic viscera. Blood pressure is raised because of increased cardiac output. An increase in heart rate is most noticeable. There are additional direct and indirect metabolic effects. Hepatic glycogenolysis produces a rise in blood sugar. There may be a long term increase in glucocorticoid production which further affects carbohydrate metabolism.

Norepinephrine is a powerful vasoconstrictor; it markedly increases peripheral resistance. As noted in patients receiving norepinephrine infusion, blood pressure may be markedly elevated while no symptoms are produced.

The classic manifestations of pheochromocytoma are the same ones which would be produced in most people if a large quantity of epinephrine were suddenly given intravenously. Many persons who harbor this tumor, probably the majority, do not give a classic history. Some never have symptoms suggestive of variable secretory rate. Others are able to give only a vague account of "spells" during which they feel unwell. Their poor recall and lack of objective observations may be due to the fact that apprehension and anxiety accompany the marked organic response to epinephrine. Of symptoms summarized by various physicians, headaches and sweating are most frequently mentioned. Without enumerating all of them, it should be emphasized that a history of attacks of some kind can usually be elicited from persons having paroxysmal secretion of pressor agents by a pheochromocytoma. In any event, diagnosis cannot be established by symptoms alone.19 Anxiety states, hyperventilation syndrome, paroxysmal tachycardia, migraine headache, periodic cerebrovascular insufficiency, hyperthyroidism, menopause, etc. may cause similar symptoms.

Physical findings such as retinopathy, papilledema, apparent abdominal crisis, coma, unsteady gait, acute pulmonary edema, etc. may suggest other disorders. Six cases of pheochromocytoma reported by Leather et al were initially diagnosed as primary renal disease in three cases and gallstone colic, cerebral tumor and toxemia of pregnancy in the remaining three.<sup>13</sup> Episodic renal failure was attributed to the effects of epinephrine and norepinephrine on the kidney (i.e. reduction of renal plasma flow and decreased urea clearance).

The reasons for the secretory behavior of pheochromocytomas are not known. Almost every form of human activity has been noted to cause attacks. Frequency and severity of attacks

vary in an unpredictable manner. Changing conditions such as environmental stress may increase production of pressor substances, but no objective evidence is available. Numerous observers report the impression that psychic tension favors an increased frequency and severity of hypertensive episodes as well as periods of persistently elevated blood pressure.

The activity of the catecholamine producing tumor causes blood pressure elevations of three basic types: intermittent elevation; persistent elevation; and persistent blood pressure elevation with further rises intermittently. Rarely, blood pressure is paradoxically lowered by circulating pressor amines.<sup>6</sup>

### **Diagnostic Tests**

Pharmacologic tests for pheochromocytoma fall into two categories. The provocative tests are used when blood pressure is below 170/110 and are best represented by the histamine test. The second category employs sympatholytic drugs, the most popular agent in current use being Regitine (phentolamine).

The histamine provocation test must be interpreted in relation to a cold pressor test. That is if positive, the maximal blood pressure rise must be significantly greater than that produced by immersing one hand in cold water for one minute. This rise in blood pressure as a result of the pheochromocytoma being stimulated to secrete pressor agents is usually around 70 mm. Hg systolic and 30 to 40 mm, diastolic. Priestly et al require 20 mm. higher systolic pressure than that produced by the cold pressor test for a positive request.19 This test is hazardous. Adequate quantities of Regitine must be available for immediate use to counteract alarming rises in blood pressure. Because of the danger, this test is not used by some physicians.<sup>18</sup> It has given both false positive and false negative results with a wide variety of drugs. Occasional false negative and false positive responses occur without apparent reason. Histamine provoked an alarming response (unreadably high blood pressure and pulmonary edema) in a patient who was later proved to have an adrenal cortical adenoma, but no pheochromocytoma.1

Regitine is believed to block the action of norepinephrine in the postganglionic sympathetic outflow where it acts as a transmitter substance. If blood pressure (above 170/110) is being maintained by circulating norepinephrine, 5.0 mg. of Regitine given introvenously produces a fall of at least 35 mm. Hg in systolic and 25 mm. in diastolic pressure. In this positive response, the lower level of blood pressure must be maintained for three or four minutes. Antihypertensive drugs are said to produce both false positive and false negative tests. 12, 19 All narcotics, tranquillizers and sedatives must be excluded for 48 hours, and no hydralazine or rauwolfia compounds can be used for two to three weeks before the test. Piperoxan (benodaine) has been used instead of Regitine but is no more specific. Side effects may be distressing and dangerous paradoxical rises in blood pressure have been observed in some patients with essential hypertension.

A positive response to a pharmacologic test was obtained in 66 of 71 patients with proven pheochromocytoma.<sup>19</sup> However, it should be noted that repeated tests were necessary in some cases because of initially negative or equivocal results. No one single test is always completely reliable.<sup>12</sup> Because of their lack of reliability, their potential hazard, their expense, and the development of chemical assays, the use of pharmacologic tests is becoming academic.

The development of techniques to assay pressor amines and their metabolites has improved diagnosis of pheochromocytoma. Certain limitations must be considered however. Assay of the blood level of catecholamines is the most direct method. The tumor must be actively secreting and, even so, the quantities dealt with may be small. The fluorometric procedures most commonly used require considerable time and skill. The presence of jaundice, hemolyzed red cells, increased intracranial pressure and certain lymphomas may cause elevated results. Similarly, use of such drugs as the tetracycline family, erythromycin, alpha-methyl-DOPA (Aldomet), salicylates, and epinephrine like substances in nasal sprays, nebulizers and cough medicines will cause misleading results.6,8,16,19 Certain foods such as bananas should be excluded from the diet before analysis.

The assay of catecholamines in the urine provides a larger quantity with which to work, but not as much as would be expected from the concentration in blood. It has been determined, using radioactive tagging of the catecholamines, that physiologic quantities are 97% metabolized by the time they appear in the urine. 4,10 Consequently, attention has been turned to the metabolites which are present in largest quantities. Two

of these, metanephrine and 3-methoxy-1-hydroxy mandelic acid, account for about 80% of administered epinephrine. The latter, also termed VMA, is determined more frequently at present because of somewhat simpler and more reliable assay techniques.11 These were originally chromatographic, but now colorimetric screening techniques have been developed which differentiate normal subjects or those with essential hypertension from patients with pheochromocytoma.<sup>10</sup> Excretion of VMA would be expected to vary abnormally in the presence of shock, or following the administration of pressor amines, insulin, monoamine oxidase inhibitors, or antihypertensive drugs. Patients with pheochromocytoma who have normal catecholamine levels in urine almost invariably demonstrate increased VMA excretion. Elevated levels of VMA provide excellent evidence for pheochromocytoma; normal levels militate against the diagnosis, but can occur at times when the tumor is not actively secreting catecholamines.

Radiologic aids to diagnosis and localization can be considered only as adjuncts. Abdominal flat plates and laminograms have demonstrated chromaffin tumors. Intravenous pyelography has been helpful in defining altered anatomic relationships. Perirenal insufflation studies are attended by danger of hypertensive crisis. This common complication, as well as occasional misleading results, makes such procedures inadvisable. Ability to localize the lesion is of little value, since most authorities agree that exploration of both adrenal areas and abdominal periaortic region is necessary. The operative approach is designed to expose these areas to careful search even though one tumor has been definitely located.

#### Management

When clinical suspicion of the presence of a pheochromocytoma is supported by chemical evidence of increased catechilamine production, early exploration is indicated. Even in the best operative risks, the presence of a pheochromocytoma makes this surgery more hazardous than is usually the case. The most enlightened preoperative, operative and postoperative care is necessary.

The greatest hazards have come from unavoidable manipulation of the tumor causing extreme blood pressure elevation, cardiac arrhythmias, etc. and the precipitous fall to hypotensive levels

when the tumor is removed. The latter was thought to be simply the result of inadequate pressor amines to maintain peripheral vascular tone. It was treated by infusing norepinephrine. Low levels of blood pressure commonly continued for several days and mortality was appreciable. From observation of this type of shock and from consideration of the known physiological effects of vasopressors, Brunjes et al postulated that a decreased red cell mass and a chronic hypovolemic state might be present.2 Appropriate preoperative studies in patients with pheochromocytoma substantiated these postulates. Preoperative restoration is rational therapy. This can be accomplished readily when the pressor amines are opposed by frequent doses of Regitine given orally in sufficient quantity to maintain blood pressure near normal levels. A case of pheochromocytoma which became resistant to Regitine has been reported, but blood pressure was satisfactorily controlled with sodium nitroprusside.17

At the time of operation, large quantities of Regitine may be required to oppose rises in pressure. Pretreatment has been helpful. With restoration of normal blood volume, other vasopressors such as Aramine should be sufficient to maintain blood pressure after the tumor has been removed. It should be mentioned that adrenal cortical insufficiency has been reported. When due to compression atrophy and or removal of the adrenals, it should be obvious. Persistent hypotension also may be caused by less apparent degrees of adrenal insufficiency. Numerous animal experiments have indicated that the two parts of the adrenal gland have a fundamental relationship. Cortical hormones sensitize to norepinephrine. This has been shown to be not simply a potentiation effect but a secondary alteration caused by prolonged presence or absence of the steroids. The effect is thought to be mediated through the concentration of sodium in the smooth muscle of arteriolar walls.<sup>20</sup> The greater the intracellular sodium content, the greater the pressure response.

Long term follow-up is advisable. Additional pheochromocytomas may develop. The physician should be alert for the occurrence of the associated processes previously mentioned. The entire family should be evaluated for presence of pheochromocytoma when one is found in a member, or when multiple endocrine adenomas are discovered.

Early efforts to diagnose pheochromocytoma before cardiovascular changes become irreversible should be a continuing practice of all physicians. What may appear to be late stage essential hypertension or renal disease may actually be cured if a chromaffin tumor can be found and removed. It should also be emphasized that a family history of high blood pressure, extreme of age, and duration of high blood pressure for a matter of years cannot be used to rule out pheochromocytoma. Better appreciation of the true incidence, not only of pheochromocytoma, but of essential hypertension will be gained by an open minded approach to the patient with high blood pressure.

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## ELECTROCARDIOGRAM

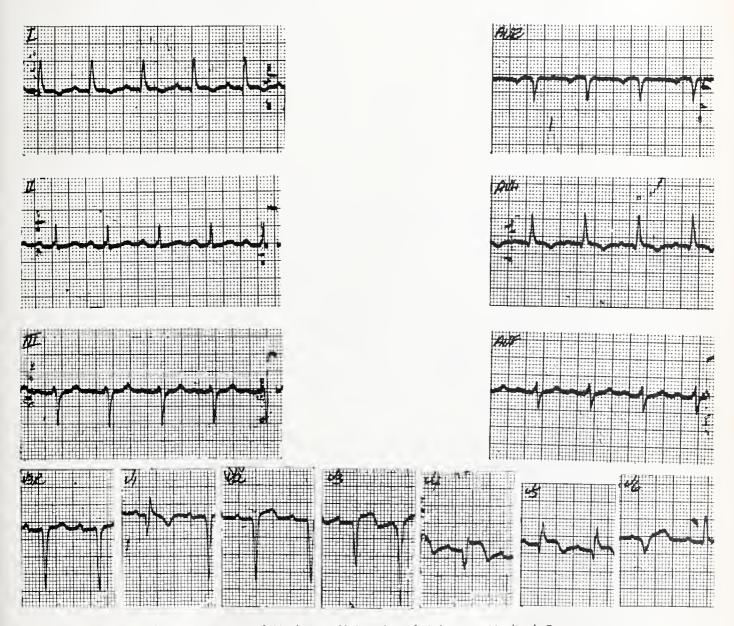
## WHAT IS YOUR INTERPRETATION?

AGE: 64 SEX, MALE. BUILD: STOCKY. BLOOD PRESSURE: 160/80

MEDICATION: Digitalis, amount not stated.

HISTORY: Has chest pain for which nitroglycerine has been prescribed.

## ANSWER ON PAGE 313

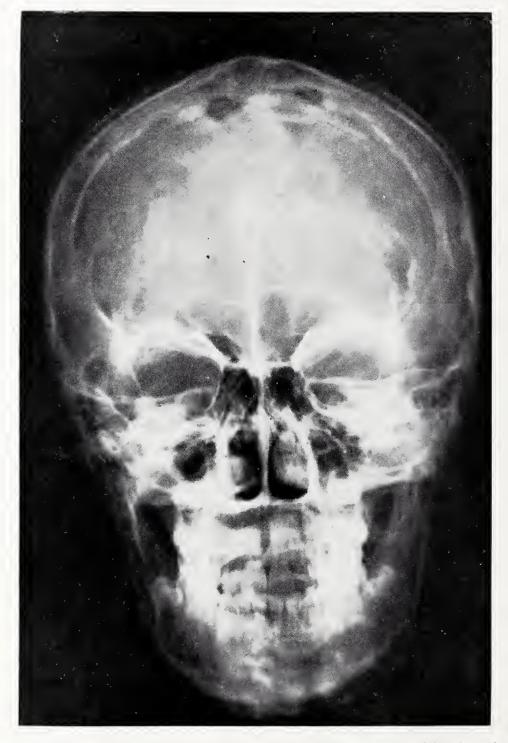


The Department of Medicine, University of Arkansas Medical Center
\*James S. Taylor, M.D., Professor of Medicine

## WHAT IS YOUR DIAGNOSIS?

Prepared by the Department of Radiology, University of Arkansas School of Medicine, Little Rock

## **ANSWER ON PAGE 313**



No. 20-47-81

12 year old colored male

History:

This child was asymptomatic. The films were made because of recent trauma.



## PUBLIC HEALTH AT A GLANCE

## PREVENTIVE MEDICINE

William L. Bunch, Jr., M.D., Director

Division of Preventive Medical Services

URING MEDICAL SCHOOL DAYS most of us were so engrossed in the details of curative medicine, and especially surgical specialties, that we were not sufficiently impressed by the epidemiological ramifications of preventable diseases and conditions in the patient's family and the community in which he lives and in which we were ultimately destined to practice medicine and surgery. The voluminous literature on each subject is bewildering to the student and is growing steadily as the printing presses continue to operate. Computers are being utilized to store and sort information compiled by those who have gone to the trouble to document their experiences, findings, theories, and philosophy for consideration of their colleagues and successors. However, presentday practice of medicine must depend on the training of the physicians of each community. Training is a continuing process, and each physician must endeavor to keep abreast of the latest developments through reading journals, such as this, or through postgraduate courses and/or seminars. The physician must acquire a significant amount of the information available on social, economic, and other factors that may be contributory to occurrence or exclusion of the various diseases or conditions for the community.

Knowledge of the constantly changing characteristics of the family units and of the community in general in relation to these social, economic, and other factors permits us to better assess the complexity of the finely balanced systems concerned with health and its subsequent transition to a diseased condition, whether abrupt or insidious. Thus each of us utilizes the epidemiological date available to make the differential diagnosis as between measles and secondary syphilis and to contribute to the ultimate control, or preferably elimination, of the condition from the family and community as well as from the patient. Thus

early reporting of all reportable diseases and conditions is the first corollary to early and accurate diagnosis. Mutual benefits are thus assured the community that has a cadre of well-qualified private practicing physicians and an adequately staffed health department to collect, process, and disseminate morbidity and other data as well as educational materials in the various categories of public health, plus offering various consultative and direct services as indicated by the community needs. A prerequisite for studies leading to practice or teaching of medicine, especially public health, obviously is a curriculum containing increasing instruction in the social sciences, also elementary statistical methods. These facilitate an understanding of epidemiology which perhaps should be introduced earlier into the medical curriculum, but how is the question. With such a background the student would enter the clinical years with a better foundation for preventive medicine. Furthering this approach many medical schools are presently properly devoting more of the student's time to training in the community rather than in the hospital alone. The summertime Preceptorships reinstituted in the training of physicians of the University of Arkansas School of Medicine are in addition to the training which takes place in the community during the regular curriculum. There is always danger in assuming that public health and hygiene or preventive medicine is adequately covered by special departments such as immunology, bacteriology, or other portions of microbiology, and by child health or obstetrics, because even here, the approach to the material covered frequently is by no means always preventive. One may devote his entire life to curative medicine and be highly successful financially in his community, yet contribute little, if anything, to the preventive medical side of the ledger.

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A healthy populace is perhaps our Nation's greatest resource. If we are to know the status of the people's health, we must have measurements that can be determined accurately and relatively easily. Compilation of reports from physicians, although slow, is one of our best sources of data, the quality of which is dependent on the accuracy of diagnosis and the completeness as well as promptness of reporting notifiable diseases and statistical measurement of community well-being is the survey, such as those which sampled various conditions. Another measurement of note in the areas of the country asking about immunization status of each member of the household and revealed that less than  $50^{or}_{00}$  of the population under 5 years of age was protected from poliomyelitis. Likewise the need for increased number of beds for the care of chronic diseases and for the aged was revealed by studies designed to better expedite utilization of general hospital beds. Nursing homes as well as rehabilitation and home nursing programs not only serve to relieve the pressure on special and general hospital facilities but also to prevent or delay progression of atrophic changes or other complications. Thus learning, relearning, or modifying of physical education procedures constitute an important area of preventive medicine also.

In the realm of preventive medicine one must also include the need for cooperation with and consideration of one's fellowman whether or not we wish to designate this aspect as mental health. Thus the impact of man upon his fellowman has many ramifications all the way from air pollution to the Zoonoses if we include Puss and Rover in the family group proper. Immunization of cats and dogs against rabies is important for their protection, but equally so for the peace of mind afforded in the event that one bites a human and observation of the penned-up animal can be substituted for the immediate institution of antirabies therapy for the person.

Effective preventive medicine implies a cooperative interdisciplinary activity in control measures against malaria, smallpox, tuberculosis, syphilis, or typhoid. The methods of control may vary, but need for united effort in recognizing the problems, striving to correct them, and continuing surveillance remains the same.

Prevalence of the so-called "water-borne" diseases is in reality an indication of lack of water or, in some instances, improper application of water. The World Health Organization empha-

sizes that "where water is scarce, people live in the grip of diseases such as cholera, diarrhea, typhoid, and others. Tragically enough the homes of by far the majority of the world's citizens—some experts say 75%—lack water".

There may be a tendency for the present generation to look at immunization as a panacea rather than to clean up the environment. A more wholesome approach obviously is to immunize against poliomyelitis and typhoid while we are improving our water supply systems and sewerage disposal systems and continuing to emphasize hand washing before eating and after going to the toilet.

Chemical elements may be utilized in preventive medicine as in chlorination of water to further reduce the microbial contaminants after filtration, aeration, sedimentation, and other steps of purification; or as in fluoridation of waters which the Supreme Being inadvertently left with a deficiency of this element if the dental structures of the human and animal populations in the area are to have enamel resistant to dental caries. Another example known to physicians, but perhaps unheard of by many, is the addition of iodine to table salt in the prevention of goitre for those in areas where the soil and water are deficient in this element.

Disease is no respecter of age, sex, race, religion, or nationality; and further, although natural boundaries may contain certain occurrences or epidemics and even protect a certain few from pandemics, national boundaries pose little or no deterrent to spread of the infection. Needless to say, diseases pay little heed to man-made laws of exit or entry to countries. The speed of transcontinental transporation has increased the risk of importation of infection from country to country, so why should we hesitate to be realistic about our own need for simultaneous statewide application of immunization or other control measures when such are available. Rules and regulations applicable to media such as food or drink, that may be passed from one individual to another by barter, still or since the days of the Phoenicians by monetary exchange, are essential if these foodstuffs are not to become greater and greater threats to the individual's health. The literature abounds with examples of botulism, ptomaine, and other food poisoning incidents resulting from goods graciously contributed to others with good intentions, yet ending in suffering or tragedy. All the typhoid carriers are not eliminated, and epidemiological

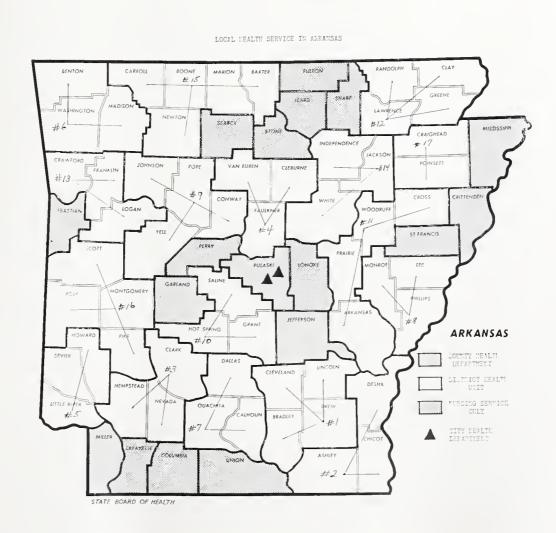
investigations are almost impossible for large gatherings where each brings a "covered dish" (covered with germs to which that family has developed tolerance). The gourmet who must "taste" some of everyone else's cooking should expect and frequently acquires some pathogenic enteric organisms from nearly every gala occasion. Because of his frequency of intestinal upsets, and the tendency to pass it off as a sequence of "normal events" plus self-medication, such episodes rarely get reported. Also laboratory investigation would not be possible for every individual case that occurs, nevertheless, a sampling of cases occuring in an area might be quite revealing of whose fecal contamination was passed to whom, provided some of the delicious morsels remain for examination, along with the stool specimens of those ill. Subsequent examination of stool specimens of those preparing the food shown to harbor the same organisms as the patient frequently, but not invariably, identifies the source of the causative organism. In addition to making an effort to identify the causative organisms, a simultaneous

effort should be made to improve sanitation, especially hand washing after going to the bathroom and prior to preparing food or drink.

Original investigation and research are as inseparable from preventive medicine as they are from pharmacology, therapeutics, surgery, and other components associated with curative medical practice.

Briefly, the goal of preventive medicine is the acquiring and sustaining of a healthy, happy population for the entire world. We recognize that all efforts in this direction must of necessity be small in beginning but each small increment, added by any member of the professional or ancillary components of the team, furthers the cause toward the goal of better health for the individual, his family, the community, the state, the nation, and the world.

The accompanying map graphically presents the public health facilities of the Arkansas State Health Department.





## **GLUCAGON**

Alfred Kahn, Jr., M.D.

Some years ago in studying insulin extracts it was realized that in addition to a lowering of glucose in the blood stream, there seemed to be a factor which temporarily elevated the blood sugar; that this hyperglycemic effect was not due to pure insulin was proved much later when insulin was obtained in pure crystalline form. This hyperglycemic producing substance from the pancreas has been shown to be a second hormone, Glucagon. Whereas insulin is made in Beta cells of the pancreas, Glucagon is secreted by Alpha cells.

Studies on the circulation of Glucagon have not been satisfactory because no methods were sensitive enough to measure the minute quantities in the blood stream. In 1959 a radio-immuno assay was developed which is capable of measuring as little as 50 millionths of a microgram. Using this technique, Unger, Eisentrout, McCall and Madison have studied endogenous glucagon in the plasma and its influence on blood glucose concentration (Journal of Clinical Investigation, Volume 41, page 682, April 1962) . These authors measured the glucagon in the pancreatico-duodenal vein of fasting dogs and found an average of 543 u u g per c.c. When hypoglycemia was induced by phlorizin the blood glucagon level rose to an average 1976 u u g per c.c. A similar result was obtained with insulin induced hypoglycemia. Hyperglycemia suppressed glucagon formation. Unger et al postuated that glucagon mobilizes hepatic glycogen. This study seems to allay any lingering suspicion as to whether or not glucagon is a hormone; it definitely seems to be a hormone with an important homeostatic relationship in controlling blood glucose.

Another interesting study on glucagon has been published in The Journal of Clincal Investigation (Volume 41, page 1099, May, 1962) by Perkoff, Parker & Hahn. They investigated glucagon in three forms of glycogen storage disease. The types studied were deficiency of (1) glucose-6-phosphatase (G-6-Pase). (2) amylo-1:6 glucosidase (limit dextrinosis) and (3) combination of types (1) and (2). In other words, glycogen storage disease can be classified by the type of enzyme deficiency. Three patients were studied who could definitely be proved to have specific enzyme deficiencies. The patient proven G-6-Pase deficiency had a mild hypoglycemia—about 57 Mg. %.; after glucagon the blood glucose rose to 86 Mg. %. The patient with limit dextrinosis had an initial hypoglycemia of 20 Mg. % and the blood glucose rose to only 31 Mg. %; this was an almost flat curve. The patient with combined enzyme deficiency had an initial blood sugar of 28 Mg. % and after glucagon therapy the blood sugar reached a level of 43 Mg. % in one hour. In other words, patients with G-6-Pase deficiency respond moderately to glucagon where patients with limit dextrinosis respond very much less. The use of glucagon over a prolonged period failed to produce significant clinical improvement in any patients in this study. The liver size did temporarily decrease in three of four patients treated, and a steady reduction in liver size was obtained in a patient with limit dextrinosis. The authors feel that limit dextrinosis can usually be differentiated from G-6-Pase by the fact that the already elevated blood lactic acid in G-6-Pase is further elevated by glucagon and there is no change with limit dextrinosis.

The study of this comparatively recently discovered hormone is not of great clinical significance now but it is an additional tool in studying glucose patho-physiology.



### Senior Medical Students Aid Morrilton Doctors

Three senior medical students, Dr. Jack Baldwin, Dr. Leslie Turk and Dr. Louis Munos, will aid Morrilton physicians in a move designed to improve service to patients. They will spend one evening each week at the local hospital relieving the doctors of some of the paperwork required in the treatment of the patients. Dr. Phillip Snodgrass will be the alternate extern. Local doctors are paying the cost of the program.

#### World Medical Association Meets in New York

The World Medical Association, composed of fifty-seven nations, held its seventeenth annual assembly at the Commodore Hotel in New York City, October 13-19. Dr. Edward R. Annis, Miami, President of the American Medical Association, was elected president. The four official representatives from the United States were Dr. Leonard W. Larson, Bismark, N. D.; Dr. R. B. Robins, Camden, Arkansas; Dr. Norman R. Welch, Boston; and Dr. Homer Pearson, Miami, Florida.

Dr. R. B. Robins of Camden, Arkansas, introduced a resolution, concerning the population growth over the world, which was adopted.

Vice President Lyndon Johnson was the keynote speaker at the opening session and Mayor Robert Wagner of New York City extended greetings.

## Seminar on Respiratory Diseases at Jonesboro

Seven of the South's leading medical authorities spoke at the second annual Physicians Seminar on Respiratory Diseases at Jonesboro Country Club, October 31.

The seminar was sponsored jointly by the Northeast Arkansas Tuberculosis Association, Craighead Poinsett Medical Society, Crittenden County Medical Society and the Greene-Clay Medical Society.

Speakers from the University of Tennessee included: Dr. C. B. McCall, assistant professor

of medicine and Dr. G. Daniel Copeland, cardiovascular diseases and assistant professor of medicine. Dr. R. B. Turnbull, director of the Tuberculosis Field Scrvice, of West Tennessee District, Department of Public Health, spoke also.

Also from the University of Tennessee: Dr. Harry L. Davis, assistant professor of Medicine, and pulmonary function laboratory, Baptist Memorial Hospital, Memphis; Dr. Orin D. Butterick Jr., thoracic surgeon and assistant professor of thoracic surgery.

Dr. Duane M. Carr, thoracic surgeon and professor of thoracic surgery at the University of Tennessee, was the speaker for the enening session.

### **New Outpatient Clinic**

A new outpatient clinic to treat children with neurological disorders has been established at the University of Arkansas Medical Center.

Dr. John Bornhofen, formerly of the University of Minnesota, has been appointed to head the new service as pediatric neurologist. The clinic will be held each Thursday for children with diseases of the nervous system causing specific learning problems, convulsive and developmental disorders, cerebral palsy and muscular dystrophy. Patients will be referred to the clinic by their personal physicians.

## The Arkansas Academy of General Practice Holds Its Annual Meeting

The Arkansas Academy of General Practice held its 16th annual meeting the 9th and 10th of October at Hotel Lafayette.

Principal speakers were Dr. Robert J. Schramel, associate professor of surgery at Tulane University at New Orleans, and Dr. Joseph Krupp Jr., assistant professor of clinical obstetrics and gynecology at Tulane.

### The Fayetteville Pediatric Convocation

The second annual Fayetteville Pediatric Convocation was held at the Medark Building, Fay-

etteville, Arkansas, October 25th and 26th.

Hosted by Drs. Wade W. Burnside and Wilbur G. Lawson, attending pediatricians were addressed by Drs. Mae and Anderson Nettleship (Chromosomal Analysis), Stephen Finch (Childhood Schizophrenia), Roger Bost (Pediatrician and Community Health), James L. Dennis (The Thorny Child). A panel of dental specialists, Drs. Kenneth Dorland, Phil Deal, and James Hunt conducted a seminar on pediatric dental problems.

Dr. Thomas Townsend, President of the Arkansas Chapter of the American Academy of Pediatrics, presided over discussion of current problems of pediatric responsibility in the conduct of child health at all administrative levels in detail.

### International Heart Meeting Set for Miami Beach

An historic first international symposium on the use of anticoagulants in coronary artery heart disease-their live-saving results and dangers- will be held at the Fontainebleau Hotel, January 9 to 11, it was announced by the Miami Heart Institute, cardiac treatment center, which is sponsoring it.

The use of anticoagulant therapy, including heparin and various coumarins and phenindandiones, has stirred much controversy, "E. Sterling Nichol, M.D., chairman, explained. "To help clarify a question so vitally affecting a great many lives throughout the world, outstanding clinicians have been invited from here to abroad to present up-to-date observations and practical clinical experience."

Physicians wishing to register should send in the registration lee of \$45, covering three luncheons, one dinner and a show, payable to Miami Heart Institute, and mail to 4701 North Meridian Avenue, Miami Beach, Florida 33140.

## Addition and Nursing Home a Reality For Local Hospital

The Department of Health, Education and Welfare approved a Hill-Burton grant of \$280,000 to the Clark County Memorial Hosipital for the addition of a 38-bed nursing home, and partial remodeling of the present building. The estimated cost of construction and equipment for the new wing, will be \$470,000 and the grant is to be matched with funds available through a recent sale of revenue bonds. These bonds are not advalorem tax bonds, and will not increase any taxes

in the county, but will be retired by the revenues from the hospital and nursing home.

### S-G Hospital to Move Patients to New Facility

The Saltzman-Guenthner Hospital, a privately owned facility which has served Baxter County more than 14 years, has become a clinic and prolessional building.

All patients which remained in the Saltzman-Guenther Hospital were moved by ambulance to the new hospital according to Dr. Ben N. Saltzman.

The expansion at the Saltzman-Guenthner Clinic includes a 12 x 80 addition to the front and a modernistic new front, and renovation of rooms in the hospital area for the purpose of creating additional treatment rooms, physiotherapy rooms, diagnostic facilities and office space. Part of the building will be made available for professional offices.

#### Arkansas Breakfast Plans Made

The seventh annual Arkansas Medical Society breakfast will be held Monday morning, June 22, 1964 at the annual meeting of the American Medical Association in San Francisco.

This Arkansas breakfast will be one of the major highlights of the AMA annual meeting this year, because the entertainer will be Miss America, who is Miss Donna Axum of El Dorado. The speaker for the occasion will be former member of Congress (Dr.) Walter Judd of Minnesota. Dr. Judd is presently a member of the Judicial Council of the American Medical Association.

The Arkansas breakfast is given in honor of the officers and members of the House of Delegates of the AMA and will have an attendance of about 400 people.

The Arkansas breakfast is financed by voluntary donations and physicians are asked to financially support this event by sending donations to "The Arkansas Medical Society Breakfast Fund", P.O. Box 128, Camden, Arkansas.

## ACCEPTED VERSUS ENROLLED MEDICAL STUDENTS

Questions are sometimes raised concerning the apparent discrepancies between the various published reports of applicants accepted and applicants enrolled in American medical colleges. This Datagram compares these figures for the six years in which complete data are available and indi-

cates how the apparent differences can be reconciled.

Table 1

Comparison of Accepted and Enrolled First-Year Medical Stedents, 1957-1962

School Year	Accepted Applicants <sup>1</sup>	NON-MAIRICUL VNTS		NIW ENTRANIS			RE-ENTRANTS	
		Number	% of Accepted	Number <sup>1</sup>	% of Accepted	Total Enrollees²	Number	% of Enrolled
(1) 1957-58	(2) 8,302	(3) 450	(4) 5.4	(5) 7,852	(6) 94.6	(7) 8,030	(8) 178	(9) 2.2
1958-59	8.366	446	5.3	7,920	94.7	8,128	208	2.6
1959-60	8.512	529	6.2	7,983	93.8	8,173	190	2.3
1960-61	8 560	491	5.7	8.069	94.3	8,298	229	2.8
1961-62	8,682	539	6.2	8,143	93.8	8,483	340	4.0
1962-63	8,959	565	6.3	8,394	93.7	8,612	248	2.9
Total	51,381	3,020		48,361		49,754	1,393	
Average	8,561	503	5.9	8,060	94.1	8,292	232	2.8

<sup>1</sup>Source: AAMC Applicant Studies published annually in the Journal of Medical Education.

Using the 1958-59 school year as an example, Table 1 shows that 8,366 applicants were offered places in the first-year class (Col. 2) but that only 7,920 of these were actually enrolled as new entrants (Col. 5). The J.A.M.A. figures in Column 7, however, indicate that there was a total of 8,128 students enrolled as freshmen that year.

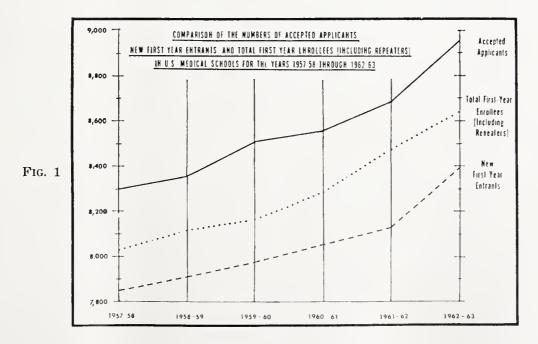
The discrepancy between "accepted applicants" (Col. 2) and "new entrants" (Col. 5)—a difference of 446 for 1958-59—is due mainly to those who declined the places they were offered. A detailed analysis of this non-matriculant group is given in Figure 2.

The discrepancy between the AAMC's "new entrants" figure (Col. 5) and the American Medi-

cal Association's "total enrollees" figure (Col. 7)—a difference of 208 for 1958-59—is due to the fact that the former is limited to students enrolled for the first time while the latter includes re-entering students who are repeating all or part of the freshman year.

Analysis of the data for the six-year period suggests a slight rise both in the percentage of "non-matriculants" (Col. 4) and in the percentage of "re-entrants" (Col. 9). The former may indicate an increase in competition from other professions while the latter may reflect a broadened policy of allowing students to repeat their first-year studies.

Information from Table I is graphically por-



<sup>&</sup>lt;sup>2</sup>Total number enrolled in the first-year class, including both new entrants and re-entrants. Source: Education Numbers (published each November) of the Journal of the American Medical Association.

trayed in Figure 1.

Because of unanswered questions about accepted applicants who do not enroll, a follow-up study was made of the 446 individuals in this group for 1958-1959.† As indicated in Figure 2, major reasons for non-matriculation were: 1) changes in vocational plans, and 2) financial problems. It was also discovered that some of the presumed non-matriculants had actually en-

rolled in a medical school, many of them attending Canadian or foreign institutions.

Concerning the non-matriculants as a whole, it should be noted that with rare exceptions the medical schools know of this group early enough to fill their places with other applicants. Thus, in spite of apparent discrepancies between some reports of accepted versus enrolled students, total first-year classes consistently have been filled to capacity.

NOTE: Analysis based on questionnaires sent to all 446 presumed non-matriculants and returned by 250 individuals.

 $^{\rm 1}{\rm Entered}$  another occupation, vocationally undecided, or accepted a lellowship.

<sup>2</sup>U. S., Canadian or foreign.

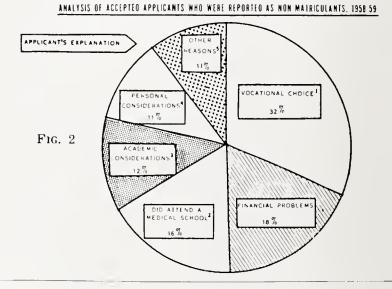
<sup>3</sup>Scholastic failure, completion of undergraduate work, not accepted by school of choice, accepted too late, etc.

<sup>4</sup>Adjustment, illness, marriage, etc.

 $^5Military$  obligations, not accepted to a medical school, deceased, etc.

†Hutchins, E. B. and Morris, W. W. "A Follow-up of High MCAT Rejected and Non-Matriculating Accepted Applicants" (J. Med. Educ., in Press),

From the Association of American Medical Colleges 2530 Ridge Avenue, Evanston, Illinois



## The Month In Washington

Washington, D.C.—President Kennedy signed into law two bills providing for a five-year, \$594.2 million federal program to combat mental illness and mental retardation through expanded research and community treatment centers.

A key feature of the legislation is a \$150 million program of grants to the states for construction of community mental health centers for inpatient and outpatient treatment of the mentally-ill. Adminstration officals said they hoped that such centers eventually would be able to take care of as much as 50 percent of the mentally ill persons now in state mental institutions. One aim of the centers is to have the family physician play a larger role in the treatment of the mentally ill.

The new law contains no authority for federal funds for stalling these centers, most controversial aspect of the legislation in congress. The American Medical Association opposed the staffing provision.

In signing the bill, President Kennedy announced that Robert Aldrich, Director of the National Institute of Child Health and Human Development, will soon call together 50 scientists

from this country and abroad to plan research on premature births.

He also announced that the office of education was setting up a new division for handicapped children and youth to administer the teaching and research program under the new law. It will be headed by Samuel Kirk, Professor of Education and Psychology at the University of Illinois.

The new law also provides \$179 million over three years for construction of treatment and research facilities for the mentally retarded and for training of teachers for mentally-retarded children.

Earlier, President Kennedy had signed into law another part of the mental retardation program that was approved in separate legislation by Congress. This calls for \$355 million to increase Federal aid in fighting mental retardation through improved maternal and child care. The five-to-seven-year program includes a plan to provide preventative medical care for low-income mothers with a high risk of giving birth to retarded children.

\* \* \* \*

The Food and Drug Administration issued the final orders on how it will carry out the new drug

law's provisions covering ethical drug advertising. The federal agency agreed to modify most of the proposed regulations that the drug companies had protested.

One previously-disputed section of the regulations was felt by the companies possibly to require the prepublication submission to FDA of advertising for virtually all important new drugs. The FDA revised the regulation to require "prior approval" of advertisments by the FDA only if the agency or the sponsor of the drug receives information not widely publized in medical literature that use of the drug may cause fatalities or serious damage.

Another issue raised concerned sections of the regulations relating to "fair balance" and "relative prominence" of information on effectiveness and precautions in use of prescription drugs in advertising copy and layouts.

FDA assured the industry that the regulations will not prohibit use of graphic presentations, headlines or other "advertising techniques." The regulations, as now claritied by the agency, will not require equal divisions of space, word counts, headlines, illustrations and so forth. On the other hand, the regulation will require that statements about precautions for use of drugs be presented in type and format to insure adequate prominence and readability.

An additional question concerned an apparent requirement that advertisements must list side effects and contra-indications for all common uses of a given drug, even if some of the uses are not referred to in the advertisement. In a clarifying statement, FDA said, in effect, that the non-recommended uses need not be mentioned in most instances—that since side effects depend for the most part on duration of use, size of dosages or class of patients, it is appropriate that the side effects be disclosed only as related to these factors. The drug firms said this served to remove their principal concern on this point.

Another issue involved in the new drug law is a section of the regulations which would require that the established or generic name of a drug must accompany each separate mention of the drug's proprietary or brand name in an advertisement and in labeling. The drug firms maintained in a federal court suit that these regulations go beyond the FDA's statutory authority, since the statute requires only that established names of prescription drugs be printed in labeling and

advertising "prominently and in type at least half as large as that used for any proprietary name."

The Food and Drug Administration was reorganized to upgrade the scientific aspects of the agency's work.

The new setup adopts major features from recommendations of a citizens advisory committee report in October, 1962.

Secretary Anthony Celebrezze said that "an important leature of the reorganization is the upgrading of the scientific functions. I expect the reorganization to improve FDA operations all along the line . . ."

An important feature of the reorganization will be the appointment of a National Advisory Council to FDA. It will advise the Administration on national needs and the effectiveness of program policies.

A new Associate Commissioner, who will be a scientist, will give leadership from the Office of the Commissioner to the programs and functions having to do with medicine, science and research.

Two new bureaus with scientific activities were established—a Bureau of Scientific Research, supporting FDA's basic mission of consumer protection, and a Bureau of Scientific Standards and Evaluation, which will handle safety clearance functions.

### Dr. Saltzman Chief of Staff of New Hospital

Dr. Ben N. Saltzman was elected chief of staff of the new Baxter General Hospital in Mountain Home, Arkansas, at a regular meeting of the Baxter County Medical Society on October 4th, 1963. Dr. Saltzman is secretary of the Medical Society.

Opening of the 39-bed facility was scheduled for November.

## Little Rock Academy of Internal Medicine Discusses Diabetes

Certain aspects of the treatment of diabetes were discussed Wednesday, November 13, at a gathering of the Little Rock Academy of Internal Medicine.

Guest lecturer was Dr. Leonard Madison, associated professor of medicine at the University of Texas Southwestern Medical School at Dallas. His appearance was sponsored by the Upjohn Company.

Dr. Madison discussed the elfects of excessive doses of insulin in the treatment of diabetes.

The meeting was held at the Hotel Sam Peck.

## Stadium 'Disaster' Test Hospitals' Emergency Plans

There was a carefully planned disaster, at War Memorial Stadium, designed by Civil Defense officials of Little Rock as a trial run for the volunteers who would be called on in the event of a real one

Three hospitals provided for the "casualties." At 12:30 p.m. thirty minutes after the staged disaster, vehicles of eight firms that make up the Little Rock unit of the National Defense Transporation Association, headed by Fredrick U. Andres, began hauling away casualties.

The Pulaski County Medical Society, the Red Cross, Little Rock Fire and Police Departments, Civil Defense and other groups and organizations co-operated in the exercise. The Greater Little Rock Hospital Council is the main sponsor.



## The Aerospace Medical Association Will Meet

The 35th Annual Scientific Meeting of the Aerospace Medical Association will be held May 11th-14th, 1964, at the Americana Hotel, Miami Beach, Florida. This Annual International Scientific Meeting will bring together more than 2000 of the world's foremost specialists in aerospace medicine and allied sciences from the United States and many foreign countries, all of whom have an intense interest in improving the safety and health of all persons involved in civil and military aviation and aeronautics.

The scientific program will consist of reports on research and developments on testing and operational applications of clinical aerospace medicine, life sciences, allied scientific specialties, bioaeronautics and astronautics. Approximately 160 papers on the latest developments in clinical aerospace medicine and the allied sciences will be presented during the four-day scientific meetings, workshops, and round-table discussions. The sci-

entific sessions will be augmented by 150 scientific and technical exhibits.

Further information may be obtained by writing to William J. Kennard, M. D., Executive Vice President, Aerospace Medical Association, Washington National Airport, Washington 1, D. C.

## Meeting To Be Held

The meetings of the Mid-Central States Orthopaedic Society will be held as follows:

May 7-9, 1964 Continental Denver, Denver, Colorado

March 25-27, 1965 Velda Rose Motel, Hot Springs, Arkansas

## Medical Students Sought for E. V. Allen Scholarships

Applications are now being accepted for the E. V. Allen Memorial Scholarship, Ralph E. Smith, M.D., president of the Minnesota Heart Association announced recently. The Mayo Foundation and the Minnesota and American Heart Association are co-sponsors of this scholarship progarm.

Pre-doctoral and post-doctoral students interested in three months' cardiovascular study at the Mayo Clinic, may obtain further information from the Minnesota Heart Association, 1821 University Avenue, St. Paul, Minnesota.

The scholarship is made possible by contributions to the E. V. Allen Fund. Members of the steering committee of the E. V. Allen memorial scholarship program are:

Dr. Irvin H. Page, Cleveland, Ohio, chairman and American Heart Association representative; Dr. John F. Fairbairn 11, Rochester, secretary and representative of the Mayo Foundation; Dr. Jesse H. Edwards, St. Paul, representing the Minnesota Heart Association; Dr. Nelson W. Barker, Dr. Arlie Barnes, Dr. Howard Burchell, Dr. Howard P. Rome, Dr. E. H. Rynearson, all of Rochester; Dr. Cecil Watson, Minneapolis, Dr. Edgar A. Hines, Brevard, North Carolina; and Dr. Dwight Wilbur, San Diego, California.

The scholarship fund is administered by Minnesota Heart Association. Contributions, which are tax deductible, total nearly \$4,000, to date.

### National Symposium Scheduled

"The Cellular Basis For the Action of Cardiac Drugs" will be the topic of a two day seminar to be sponsored by the Heart Association of Southcastern Pennsylvania. The sessions will be held February 27 and 28, 4964 at the Sheraton Hotel, Philadelphia, Pennsylvania.

Additional information and reservations may be obtained by contacting the Heart Association of Southeastern Pennsylvania, 318 S. 19th Street, Philadelphia 3, Pennsylvania. Registration fee is \$10.00.

### Scholarship Available

In 1964, the Medical Library Association will offer the Marion Dondale Scholarship in the amount of \$1,000 to assist a student showing promise for medical librarianship to attend any American Library Association accredited library school. Funds are available for a student entering library school in either the summer or fall terms.

The applicant must be under 30 years of age, and hold a bachelor's degree, preferably in one of the life sciences. A minimum requirement is 15 semester units or their equivalent.

Selection will be made by the Medical Library Association's Committee on Standards. Unless distance is prohibitive, scholarship candidates will be asked to have a personal interview with a medical librarian in his area. The dead-line for accept-

in applications is March 1, 1964. Application forms are available from any A.L.A. accredited library school.

### Four-Day Meeting for Doctors and Nurses, March 16-19, 1964, New Orleans

Surgeons and graduate nurses are invited to the tenth annual joint meeting of the American College of Surgeons in New Orleans, March 16-19, 1964. Headquarters hotel for doctors will be the Roosevelt, and for nurses the Jung.

This is the College's only four-day meeting for 1964, and the only meeting with a program for nurses. This joint meeting pioneered in Cleveland in 1955, and has been a success ever since.

Scope of the meeting approaches that of the annual Clinical Congress. Doctors sessions will be held in general surgery and in the specialities of gynecology and obstetrics, ophthalmic surgery, otolaryngology, urology, proctology, neurologic, orthopedic, plastic, and thoracic surgery. There will be daily "How I Do It" nonoperative clinics—educational demonstrations by surgeons noted for specific techniques, scientific papers, panel discussions, selected films, and industrial exhibits of interest.

ANSWER-Electrocardiogram of the Month

RATE: 100 RHYTHM: Sinus

PR: .2 sec. QRS: .08 sec. QT: .36 sec.

INTERPRETATION: Abnormal. Acute myocardial infarction, transmural, anterior.

COMMENT: Tracing shows classical changes of an acute infarction. The fusion beats disappeared under procaine amide therapy. ANSWER-What is Your Diagnosis

Diagnosis: Congenital parietal foramina

X-Ray Features: Two lytic defects are present on either side of the midline in the posterior part of the parietal bones. They are normal vascular channels which are usually quite small. However, rarely they may appear large due to failure of the membranous bone in this region. There is a distinct heriditary tendency for the occurrence of bilateral enlarged parietal foramina.

They are of no clinical importance but may be mistaken for trephine holes or other pathologic lesions. Dr. Isidore Cohn Jr. is chairman of the local advisory committee on arrangements. Miss Myrtle A. Olstad, R.N., is chairman of the nurses planning committee. Panel discussions will be held with doctors and nurses sharing the rostrum in discussions will be held with doctors and nurses sharing the rostrum in discussions of mutual problems. Special films will also be shown. Nurses are guests of the College, and pay no registration fee.

Advance housing registration forms, giving hotel rates and registration hours, may be obtained by writing to the College headquarters: Mr. T. E. McGinnis, American College of Surgeons, 55 East Erie Street, Chicago 11, Illinois.

This is the third and final Sectional Meeting in the College's 1964 schedule. Dr. James H. Spencer, assistant director, Chicago, is in charge of the College's Sectional Meeting program.

The 1964 annual Clinical Congress will be held in Chicago, October 5-9.

# AMERICAN COLLEGE OF SURGEONS New Orleans Sectional Meeting March 16-19, 1964

# SURGEONS' ADVISORY COMMITTEE ON LOCAL ARRANGEMENTS

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Sister Mary Louise, Co-chairman Mildred Ann Vogel, Co-chairman

\*Executive Committee

SURGEONS' PROGRAM Roosevelt Hotel

### GENERAL SURGERY

Monday, March 16 9:30 a.m.-12:00 noon

Symposium on Gastric Surgery

FIELD, Centerville, Miss.

Presiding: HAROLD LAUFMAN, Chicago.

Complications of Gastric Surgery. GEORGE JORDON, Houston.

Steroids and Hemorrhagic Disorders, GORDON McHARDY, New Orleans,

The Role of Cirrhosis in Peptic Ulcer Disease. BEN EISEMAN, Lexington.

Ulcerogenic Tumors (Polyglandular Disease) DANIEL ELLIOTT, Columbus.

Gastric Freezing. EDWARD T. PETER, Minneapolis. Gastric Freezing in a Rural Community. RICHARD

Recent Developments in Gastric Physiology, DAVID STATE, New York.

2:00-5:15 p.m.

Presiding: CURTIS P. ARTZ, Jackson.

2:00-4:00 p.m.

"How I Do It" Clinic-Cancer Chemotherapy. Moderator: MURRAY M. COPELAND, Houston.

Extremity Perfusion. OSCAR CREECH, JR., New Orleans. Pelvic Perfusion. J. B. AUST, Minneapolis.

Arterial Infusion. JOHN STEHLIN, JR., Houston.

Adjuvant Chemotherapy, EDWARD T. KREMENTZ, New Orleans.

Chemotherapy for Palliation. JOHN D. HURLEY, Milwaukee.

4:15-5:15 p.m.

Papers:

Hiatal Hernia. EDWARD WOODWARD, Gainesville, Fla. Application of Hyperbaric Conditions to Surgery.

Tuesday, March 17 9:00 a.m.-12:00 noon

Symposium: Vascular Disorders.

Presiding: HARRIS B. SHUMACKER, JR. Indianapolis. Cerebrovascular Disease. CHAMP LYONS, Birmingham. Peripheral Vascular Disease. D. EMERICK SZILAGYI. Detroit.

Abdominal Aneurysms. ORMAND JULIAN, Chicago.

Ruptured Abdominal Anenrysms, E. STANLEY CRAW-FORD, Houston.

Renal Hypertension. PAUL T. DeCAMP, New Orleans, Vascular Disorders in Costa Rica. A. VESALIO GUZMAN,

Vascular Disorders in Costa Rica, A. VESALIO GUZMA!
San Jose.

Varicose Veins, JOHN L. KEELEY, Chicago.

Lymphedema, Indurated Leg and Leg Ulcer. TRUMAN G. BLOCKER, JR., Galveston.

2:00-5:15 p.m.

Presiding: EDGAR J. POTH, Galveston.

2:00-3:30 p.m.

Panel Discussion: Thromboembolism.

Moderator: GEZA de TAKATS, Chicago.

Review of Anticoagulants. W. ANDREW DALE, Nashville. Thrombectomy. HOWARD MAHORNER, New Orleans. Pulmonary Embolism. FRANK C. SPENCER, Lexington.

Tuesday, March 17 3:45-5:15 p.m.

Panel Discussion: Alimentary Tract Singery in Infancy and Childhood. Moderator: THOMAS C. MOORE, Muncie, Ind.

Hirschsprung's Disease. THOMAS G. BAFFES, Skokie, Ill. Gastrointestinal Bleeding. WILLIAM R. MORETZ, Augusta.

Fracheoesophageal Fistula and Diaphragmatic Hernia. HUGH B. LYNN, Rochester, Minn.

Congenital Intestinal Obstruction, Atresia, Malrotation, Mechanical Ileus. THOMAS C. MOORE, Muncie.

Abnormalities of the Umbilicus, Omphalocele, Uracus, Omphalomesenteric Duct. ROWENA SPENCER, New Orleans.

Wednesday, March 18 9:00 a.m. 12:00 noon

Presiding: LOUIS T. BYARS, St. Louis.

9:00 a.m.-10:30 a.m.

Panel Discussion: Functioning Endocrine Tumors.
Moderator: OLIVER COPE, Boston.
Parathyroid Problems. LEON GOLDMAN, San Francisco,
Thyroid Problems. BROWN M. DOBYNS, Cleveland.
Insulinomas. KENNETH W. WARREN, Boston.
Adrenal Problems. H. WILLIAM SCOTT, Nashville.

### 11:00-12:00 Noon

Paper: Transplantation of Tissues and Organs, J. ENGLE-BERT DUNPHY, Portland.

2:00-5:15 p.m.

Papers:

Presiding: HARWELL WILSON, Memphis.

Intrahepatic Calculi, ALEX COBO, Cali, Colombia.

Liver Injuries. ROBERT S. SPARKMAN, Dallas.

Resction of the Liver. WILLIAM P. LONGMIRE, JR., Los Angeles.

Shunting Procedures, KEITH REEMTSMA, New Orleans, Hypersplenism. WILLIAM D. HOLDEN, Cleveland.

Pyogenic Abscess of the Liver. JAMES D. RIVES, New Orleans.

Amebic Abscess of the Liver, ALTON OCHSNER, New Orleans.

Parotid Tumors. EDGAR L. FRAZELL, New York. Intraoral Carcinoma. DANELY P. SLAUGHTER, Chicago.

Thursday, March 19 9:00 a.m.-I2:00 noon

Presiding: JAMES A. KIRTLEY, JR., Nashville.

9:00 a.m.-10:30 a.m.

Panel Discussion: Hypothermia.

Moderator: F. JOHN LEWIS, Chicago.

Cardiac Arrest and Head Injury. G. RAINEY WILLIAMS, Oklahoma City.

Sepsis. ROGER SHERMAN, Memphis.

Hepatic Disease, WILLIAM P. LONGMIRE, JR., Los Angeles.

Intracardiac Surgery. E. CONVERSE PEIRCE II, Knoxville.

10:45-12:00 noon

Panel Discussion: Chest Trauma Moderator: Rudolf J. Noer, Louisville. Panel: OSLER ABBOTT, Atlanta.
BERTRAM A. GLASS, New Orleans.
ROBERT SCHRAMEL, New Orleans.

Thursday, March 19 2:00-5:00 p.m.

Papers:

Presiding: AMBROSE H. STORCK, New Orleans.

Medical Aspects of the National Man-In-Space Program. D. H. STODDARD, Washington.

Mammography for Diagnosis of Breast Disease. ROBERT L. EGAN, Indianapolis.

Diagnosis of Upper Gastrointestinal Bleeding, STANLEY O. HOERR, Cleveland.

Chronic Pancreatitis. W. JAMES GILLESBY, Hines, Ill. Colon Problems. R. KENNEDY GILCHRIST, Chicago.

Antibiotics for Gastrointestinal Surgery, ISIDORE COHN, JR., New Orleans.

Infections in the Operating Room, HARVEY R. BERNARD St. Louis.

### OPHTHALMIC SURGERY

Monday, March 16 9:30 a.m.-12:00 noon

Presiding: EVERETT L. GOAR, Houston.

9:30-10:45 a.m.

Panel Discussion: Surgery of Senile Cataract.

Moderator: KENNETH L. ROPER, Chicago.

Panel: THOMAS O. PAUL, Birmingham
G. DAVID McCLURE, Louisville.

ALBERT N. LEMOINE, JR., Kansas City, Mo.

10:45 a.m.-12:00 noon

Panel Discussion: Surgery of Traumatic Cataract.

Panel: JAMES V. BOLGER JR., Milwaukee. WILLIAM J. KNAUER, Jacksonville, Fla.

2:00-5:00 p.m.

Presiding: ROBERT A. SCHIMEK, New Orleans.

2:00-3:45 p.m.

Panel Discussion: Surgery of Congenital Cataract.

Moderator: CHARLES THOMAS, Cleveland.

Panel: ARTHUR H. DOWNING, Des Moines. GEORGE S. ELLIS, New Orleans, IRA L. ARNOLD, JR., Chattanooga.

3:45-5:00 p.m.

Panel Discussion: Surgery of Congenital Glaucoma.

Moderator: J. CONRAD GEMEROY, Detroit.

Panel: EDWARD C. ALBERS, Champaign. GEORGE T. STINE, Columbus. PAUL W. MILES, St. Louis.

> Tuesday, March 17 9:00 a.m.-12:00 noon

Presiding: A. PENN CRAIN, JR., Shreveport.

9:00-10:30 a.m.

Panel Discussion: Surgery of Open-Angle Glaucoma.

Moderator: H. SAUL SUGAR, Detroit,

Panel: KARI W. ASCHER, Cincinnati. GEORGE NADEAU, JR., Green Bay, Wis.

ANDREAS V. MORTENSEN, Mobile,

Luesday, March 17 10:30 a.m.-12:00 noon

Panel Discussion: Surgery of Angle Closure Glaucoma.

Moderator: PIERRE G. JENKINS, Charleston.

Panel: SAM B. JOHNSON, Jackson. BARNET R. SAKLER, Cincinnati. GEORGE R. KOLODNY, Houston.

2:00-5:15 p.m.

Presiding: B. MORRIS PHILLIPS, Monroe, La.

"How I Do It" Clinic

Ptosis. JAMES L. MIMS, JR., San Antonio.

Dacryorhinostomy, ALTON V. HOLLUM, Atlanta.

Pterygia. BERTON F. FRINK, McAllen, Texas.

Muscle Recession and Resection, EDWIN E. GARRETT, Houston.

Recession of Inferior Oblique Muscle. EDMOND L. COOPER, Royal Oak, Mich.

Spastic Entropion. THOMAS S. HARBIN, Rome, Ga.

Senile Ectropion. ALSTON CALLAHAN, Birmingham.

Evisceration. L. DAVID WRIGHT, Corpus Christi, Texas. Enucleation with Implant, WILBUR W. BAUMGART-

NER, Kewanee, Ill.

OTOLARYNGOLOGY

Monday, March 16

9:30 a.m.-12:00 noon

Presiding: VERLING HART, Charlotte.

Papers:

Management Stenosis of Larvnx, DONALD A. CORGILL, Dallas.

The Economic Value of Rhinoplastic Procedures. SAM SANDERS, Memphis.

The Present Status of Frontal Sinus Surgery, BURTON SOBOROFF, Chicago.

The Relief of Vertigo. LYLE SELLERS, Dallas.

The Headache Patient. ROBERT E. RYAN, St. Louis.

Changing Techniques in Stapedectomies. -What Can We Expect? FREDERICK GUILFORD, Houston.

2:00-4:30 p.m.

Presiding: JOHN LINDSEY. Chicago.

Panel Discussion: Surgical Treatment of Otosclerosis.

Moderator: THEODORE WALSH, St. Louis.

Panel: CLAIR KOS, Iowa City.

FREDERICK GUILFORD, Houston. G. DOUGLAS HAYDEN, Richmond. BRUCE PROCTOR, Detroit. JAMES E. CROUSHORE, Detroit. CHARLES KINNEY, Cleveland.

> Tuesday, March 17 9:30 a.m.-12:00 noon

Presiding: JAMES T. KING, Atlanta.

Papers:

Surgery of the Parotid Gland, JOHN E. MAGIELSKI, Ann Arbor.

Tympanoplastic Problems. JAMES CHANDLER, Miami.

The Importance of Bronchoscopy in Bronchogenic Carcinoma. Persistent External Otitis. JAMES McLAURIN, Baton Rouge.

Metabolic Disorders as Related to Otolaryngology. STANTON FRIEDBERG, Chicago.

Laryngoplasty, IRVING BLATT, New Orleans,

### GENERAL AND OTOLARYNGOLOGY

Tuesday, March 17

2:00-4:30 p.m.

Presiding: ALBERT FURSTENBERG, Ann Arbor.

Panel Discussion: Malignancies of the Head and Neck.

Moderator: Walter Work, Ann Arbor. Panel: HERBERT HARRIS, Houston

> OLIVER H. BEAHRS, Rochester, Minn. DANELY P. SLAUGHTER, Chicago.

### PLASTIC SURGERY

Monday, March 16

9:30 a.m.-12:00 noon

Presiding: LOUIS T. BYARS, St. Louis.

9:30-10:15 a.m.

Panel Discussion: The Temporomandibular Joint-Disease

& Injury

Moderator: CLIFFORD L. KIEHN, Cleveland.

Panel: REED O. DINGMAN, Ann Arbor. WILLIAM A. LANGE, Detroit.

JAMES HENDRIX, JR., Jackson, Miss.

11:00-12:00 noon

"How I Do It" Clinic

Parotidectomy, STEPHEN R. LEWIS, Galveston.

Ptosis-Surgical Correction.

Repair of Flexor Tendons. WILLIAM H. FRACKELTON,

Milwankee.

2:00-5:15 p.m.

Presiding: STUART D. GORDON, Toronto.

2:00-3:30 p.m.

Panel Discussion: Repair of Cleft Lip.

Moderator: FRANK McDOWELL, St. Louis.

Panel: ROBERT HAGERTY, Charleston. CHARLES W. TENNISON, San Antonio. D. RALPH MILLARD, JR., Miami.

3:45-5:15 p.m.

Panel Discussion: Augmentation Mammaplasty.

Moderator: THOMAS D. CRONIN, Houston,

Panel: JOHN R. LEWIS, JR., Atlanta. BROMLEY S. FREEMAN, Houston. JACOB J. LONGACRE, Cincinnati.

THORACIC SURGERY

Wednesday, March 18 9:00 a.m.-12:00 noon

Presiding: LAWRENCE STRUG, New Orleans.

9:00-10:30 a.m.

Panel Discussion: Esophageal Replacement.

Moderator: THOMAS H. BURFORD, St. Louis.

Panel: G. V. BRINDLEY, JR., Temple, Texas. KARL P. KLASSEN, Columbus, Ohio.

WILLIAM NEVILLE, Cleveland.

10:45-12:00 noon

Papers:

X-ray Therapy of Esophageal Carcinoma, MANUEL GARCIA, New Orleans.

Esophageal Atresia. JOE MORRIS, Ann Arbor.

Early Therapy of Esophageal Burns, IRVING BLATT, New Orleans.

Spastic Disorders of Esophagus, F. H. ELLIS, JR., Rochester, Minn.

2:00-1:00 p.m.

Presiding: CHARLES BESKIN, Baton Rouge.

Papers:

Therapy of Staphylococcal Picumonia. ROBERT McBURNEY, Memphis,

Superior Sulcus Tumors. DONALD R. PAULSON, Dallas. Mediastinal Tumors, J. W. PEABODY, JR., Washington.

Problems in Ventilation Following Surgery-Long-term Assisted Respiration. GEORGE H. A. CLOWES, JR., Charleston.

Current Therapy of Pulmonary Infections Caused by Actinomycetes, Yeasts and Fungi, HOWARD BUECHNER, New Orleans.

Emphysematous Blebs and Bullac, Giant Air Cysts of the Aquired Type. WILLIAM E. ADAMS, Chicago.

Thursday, March 19 9:00 a.m.-12:00 noon

Presiding: RUSH NETTERVILLE, Jackson.

Open Heart Symposium

Technical Aspects of Open Heart, WILL C. SEALY, Durham.

Pump Primers. ALLEN E. GREER, Oklahoma City.

Pulmonary Hypertension, HOWARD SIRAK, Columbus.

Treatment in Newborn. DENTON A. COOLEY, Houston.

Transposition of the Great Vessels, THOMAS E. BAFFES, Skokie, Ill.

Abnormal Pulmonary Venous Drainage, JOHN OCHSNER, New Orleans.

Tetralogy of Fallot, JOHANN L. EHRENHAFT, Iowa City.

Mitral Valve Replacment. DON EFFLER, Cleveland.

Aortic Valve Replacement. DWIGHT C. McGOON, Rochester, Minn,

2:00-4:00 p.m.

Presiding: J. H. JOHNSTON, Jackson.

"How I Do It" Clinic

Atypical Coarctation. GEORGE MORRIS, JR., Houston. Dissecting Aneurysms. LEWIS H. BOSHER, Richmond. Injuries to Aorta. WATTS R. WEBB, Jackson.

Luctic and Arteriosclerotic Ancurysms. HENRY BAHN-SON, Baltimore.

Patent Ductus in Adults. W. S. EDWARDS, Birmingham.

### PROCTOLOGY

Wednesday, March 18

2:00-5:15 p.m.

Presiding: MERRILL O. HINES, New Orleans.

2:00-3:30 p.m.

Panel Discussion: Carcinoma and Diverticulitis of the Colon and Rectum.

Moderator: WILLARD H. PARSONS, Vicksburg.

Panel: Carcinoma of the Colon. JAMES A. FERGUSON, Grand Rapids.

Carcinoma of the Rectum—Choice of Procedure, ROBERT J. ROWE, Dallas.

Management of Diverticulitis and its Complications
—Present Concepts of Management. L. H.
MAYFIELD, Memphis.

3:45-5:15 p.m.

"How I Do It" Clinic

Management of Princitus Ani, RONALD F. ELKINS, Springfield, Mo.

Surgical Repair of Incontinent Anal Sphincter, CHARLES A. NEUMEISTER, Minneapolis.

Thrombotic External and Strangulated and Thrombotic Internal Hemorrhoids, WILLIAM A. BLANK, Toledo.

Preparation of Patients for Colonic Surgery. EDGAR J. POTH, Galveston.

Management of Perforation of the Colon. WILLIAM C. BERNSTEIN, St. Paul.

Thursday, March 19 1:30-2:00 p.m.

Motion Picture;

2:00-5:15 p.m.

Presiding: PATRICK H. HANLEY, New Orleans.

2:00-3:30 p.m.

Panel Discussion: Heostomy, Colostomy and Cecostomy.

Moderator: Frederick B. Campbell, Kansas City, Mo.

Panel:

Factors that Influence the Choice of Surgical Procedure in Chronic Ulcerative Colitis. OLIVER H. BEAHRS, Rochester, Minn.

Technical—Surgical Aspects in Construction of Ileostomy, Colostomy and Cecostomy, DON W. McLEAN, Detroit.

Management of Complications of Heostomy, Colostomy and Cecostomy, JOHN E. RAY, New Orleans.

3:45-5:15 p.m.

"How I Do It" Clinic

Fissurectomy. JULIUS E. LINN, Birmingham.

Incision and Drainage of Suppurative Processes about the Anorectal Area. TOM E. SMITH, Dallas.

Fistula-in-Ano. J. W. HARRIS, Houston.

The Treatment of Coccygodynia by Massage. GEORGE II. THIELE, Kansas City, Mo.

Polyps of the Rectum and Colon. RALPH M. BURKE, Detroit.

### NEUROLOGIC SURGERY

Tuesday, March 17

9:00 a.m.-12:00 noon

Presiding: DEAN H. ECHOLS, New Orleans.

9:00-10:30 a.m.

Panel Discussion: Surgical Treatment of Disk Disease in Cervical Region by Anterior and Posterior Approaches.

Moderator: RICHARD C. SCHNEIDER, Ann Arbor.

Panel: FRANK H. MAYFIELD, Cincinnati. WILLIAM KEMP CLARK, Dallas. HOMER S. SWANSON, Atlanta,

10:30 a.m.-12:00 noon

Papers:

Chemotherapy of Gliomas. RAEBURN C. LLEWELLYN, New Orleans.

Positive Coutrast Ventriculography, WILLIAM F. MEACHAM, Nashville.

Present Status of Urea in Neurosurgery, MANUCHER JAVID, Madison.

2:00-5:15 p.m.

Presiding: JOHN D. JACKSON, New Orleans.

### **FEATURES**

2:00-3:30 p.m.

Panel Discussion: Intracranial Aneurysms; Methods of Surgical Treatment.

Moderator: HAROLD C. VORIS, Chicago.

Panel: WALLACE B. HAMBY, Cleveland. ALFRED UIHLEIN, Rochester, Minn. FRANCIS MURPHEY, Memphis.

3:30-5:15 p.m.

Papers:

Syringomyelia. HOMER D. KIRGIS, New Orleans.

Brain Scanning for Tumors. LYLE A. FRENCH, Minneapolis.

Current Methods and Treatment in Brain Injuries. JAMES G. GALBRAITH, Birmingham.

Surgical Treatment of Parkinson's Disease. ORLANDO J. ANDY, Jackson.

### UROLOGY

Wednesday, March 18 9:00 a.m.-12:00 noon

Presiding: SAMUEL RAINES, Memphis.

Papers:

Treatment of Stress Incontinence in the Female. IAN M. THOMPSON, Columbia, Mo.

--- Cystectomy and Urinary Diversion. JAMES H. DE WEERD, Rochester, Minn.

Treatment of Carcinoma of the Bladder. JUSTIN J. CORDONNIER, St. Louis.

Current Therapy for Urinary Tract Infection. GRAYSON L. CARROLL, St. Louis.

Methods and Technique in the Diagnosis of Renovascular Hypertension. HAL K. MARDIS, New Orleans.

Treatment of Renovascular Hypertension. R. R. SCOTT, Houston.

2:00-5:00 p.m.

Presiding: EDGAR BURNS, New Orleans.

2:00-2:45 p.m.

Paper: Urological Management of the Paraplegic Patient. R. C. BUNTS, Richmond.

2:45-5:00 p.m.

Symposium: Urinary Tract Injuries.

Injuries of the Kidney. GILBERT C. TOMSKEY, New Orleans.

Urinary Complications Secondary to Abdominal and Pelvic Surgery. HARRY M. SPENCE, Dallas.

Bladder and Urethral Injuries. ALBERT J. PAQUIN, JR., Charlottesville.

> Thursday, March 19 9:00 a.m.-12:00 noon

Presiding: POWELL G. FOX, Raleigh.

Papers:

Experiences with the Transurethral Prostatic Resection. EDWARD H. RAY, Lexington.

Complications of Radical Prostatic Surgery. JAMES L. CAMPBELL, Orlando, Fla.

Newer Developments in the Treatment of Carcinoma of the Prostate. RUBIN H. FLOCKS, Iowa City.

Bladder Neck Obstruction in Children, ROBERT LICH, Louisville.

Management of the Undescended Testicle. ROBERT A. GARRETT, Indianapolis.

Diagnosis and Treatment of Testicular Tumors. JOHN F. PATTON, Washington.

2:00-5:00 p.m.

Presiding: CHARLES A. HOOKS, Galveston.

2:00-2:45 p.m.

Paper: Anesthesia for the Urology Patient. JOHN ADRIANI, New Orleans.

2:45-5:00 p.m.

Symposium: Urinary Calculi.

Composition and Formation of Renal Calculi. EDWIN L. PRIEN, Brookline.

Management of Urinary Calculi, WILLIAM H. BOYCE, Winston-Salem.

Calculus Disease in Children, VICTOR A. POLITANO, Miami.

Hyperparathyroidism and Calculus Disease. DOUGLAS GORDON, Baton Rouge.

### ORTHOPEDIC SURGERY

Monday, March 16 9:30 a.m.-12:00 noon

Presiding: HARRY D. MORRIS, New Orleans.

Papers:

Results of Treatment of Fractures of Shaft of Humerus.

ROBERT G. THOMPSON, Chicago. Benign Lesions of the Musculoskeletal System Often Mistaken for Malignancies. MARY S. SHERMAN, New

Orleans. Treatment of Supracondylar Fractures of Femur, MARCUS STEWART, Memphis.

Treatment and Prognosis of Pathological Fractures. MICHAEL BONFIGLIO, Iowa City.

2:00-5:15 p.m.

Presiding: THOMAS H. BLAKE, Jackson.

2:00-3:30 p.m.

Panel Discussion: Acute Injuries to the Knee. Moderator: BRUCE J. BREWER, Milwaukee.

Panel: JACK C. HUGHSTON, Columbus, Ga. ALVIN INGRAM, Memphis. IRVIN CAHEN, New Orleans.

3:45-5:15 p.m.

Panel Discussion: Management of Acute Injuries to the Hand.

Moderator: DANIEL C. RIORDAN, New Orleans.

Panel: CRAMPTON HARRIS, Mobile. DON L. EYLER, Nashville. ARTHUR H. STEIN, JR., St. Louis.

> Tuesday, March 17 9:00 a.m.-12:00 noon

Presiding: NICK ACCARDO, New Orleans.

9:00-11:00 a.m.

Panel Discussion: Present Status of Replacement Prosthesis for Femoral Heads.

Moderator: JOHN J. HINCHEY. San Antonio.

Fresh Fractures. STERLING J. RITCHEY, Atlanta.

Reconstructive Procedures. AUSTIN T. MOORE, Columbia, S. C.

Failed Prosthesis. MARK COVENTRY, Rochester, Minn.

11:00-12:00 noon

Papers:

Management of the Unstable Trochanteric Fracture. HAROLD B. BOYD, Memphis.

Fat Embolism in Acute Trauma. R. BEVERLEY RAY, Memphis.

2:00-5:15 p.m.

Presiding: GEORGE BERKETT, New Orleans.

2:00-3:15 p.m.

Papers:

Supracondylar Fractures of the Elbow in Children. LYMAN SMITH, Elgin, Ill.

Fractures of the Hip in Children. WOOD LOVELL, Atlanta.

Metallic Implants in Orthopedic Surgery. JACK K. WICKSTROM, New Orleans.

3:30-5:15 p.m.

Panel Discussion: Amputations and Prostheses Today.

Moderator: CLINTON L. COMPERE, Chicago.

Panel: RUFUS H. ALLDREDGE, New Orleans. DAVID G. VESELEY, Birmingham. EDWARD HOLSCHER, St. Louis.

#### GYNECOLOGY-OBSTETRICS

Wednesday, March 18 9:00 a.m.-12:00 noon

Presiding: EUGENE H. COUNTISS, New Orleans.

9:00-10:30 a.m.

Panel Discussion: The Progestogens.

Moderator: SAMUEL J. BEHRMAN, Ann Arbor.

Panel: FREDRICK J. HOFMEISTER, Milwaukee.
RALPH W. JACK, Miami.

10:45-12:00 noon

Panel Discussion: Ruptured Fetal Membranes.

Moderator: WILLIAM F. THOMAS, JR., Tulsa.

Panel: RICHARD D. BRYANT, Cincinnati, ROBERT B. WILSON, Rochester, Minn. SILAS H. STARR, Louisville, EARLY B. LOKEY, JR., Amarillo.

2:00-5:15 p.m.

Presiding: CHARLES S. STEVENSON, Detroit.

2:00-3:30 p.m.

Panel Discussion: Pelvic Conditions Causing the Acute

Abdomen.

Moderator: BUFORD WORD, Birmingham.

Pauel: JAMES H. FERGUSON, Miami WILLIS E. BROWN, Little Rock. WILLIAM B. STROMME, Minneapolis. WILLIAM T. BLACK, JR., Memphis.

3:45-5:15 p.m.

Panel Discussion: Thyroid Disease and Pregnancy.

Moderator: RALPH A. REIS, Chicago.

Panel: SAMUEL B. NADLER, New Orleans. RALPH V. PLATOU, New Orleans. WALTER F. BECKER, New Orleans.

Thursday, March 19 9:00 a.m.-12:00 noon

Presiding: FREDRICK H. FALLS, Oak Park, Ill.

9:00-19:30 a.m.

Panel Discussion: Cesarean Hysterectomy. Moderator: VANDA A. DAVIDSON, Dallas.

Panel: M. EDWARD DAVIS, Chicago ISADORE DYER, New Orleans MICHAEL NEWTON, Jackson RODNEY G. MASTERSON, Alexandría, La.

10:45-12:00 noon

Panel Discussion: Stress Urinary Incontinence.

Moderator: JOHN W. HUFFMAN, Chicago.

Panel: C. PAUL HODGKINSON, Detroit.

KERMIT E. KRANTZ, Kansas City, Kan.

DENTON KERR, Houston.

JULIUS H. MULLINS, Baton Rouge

2:00-5:15 p.m.

Presiding: CONRAD G. COLLINS, New OrleansSymposium: Invasive Cancer of the Cervix Uteri.
Radiation Therapy. JOHN A. WALL, Houston.
Primary Surgery. JOSEPH W. KELSO, Oklahoma City.
Schauta Procedure. MILTON L. McCALL, Pittsburgh.
Radiation Followed by Surgery. PHILIP J. KRUPP, JR.,
New Orleans

Radiation and Pelvic Node Dissection, FELIX N. RUTLEDGE, Houston.

Pelvic Exenteration. JOSEPH H. PRATT, Rochester, Minu.



# Infectious Syndromes of Leukemias And Lymphomas

S. P. Miller and E. Shanbrom, Amer J Med Sci 246:420 (Oct) 1963

Serious bacterial infections were seen in 15% of 475 cases of hematological neoplasia in a 2-year period. Sixty per cent of these occurred in patients with acute leukemia. Septicemia was the most frequent infection (36 cases). Three syndromes are emphasized: (1) bacteremic shock and rapid

death due to gram-negative bacilli; (2) indolent progressive septicemia due to resistant staphylococcic infection; and (3) perirectal infections. The increased susceptibility noted may result from reduced myelopoietic function, hypogammaglobulinemia and sometimes from chemotherapy of the primary disease. The use of myelosuppressive agents and adrenal cortical steroids may increase the risk of serious and overwhelming infection in patients with malignant reticuloendothelial disease.



### PERSONAL AND NEWS ITEMS

### Remodeling, Enlargement of Clinic Underway

Dr. Ben N. Saltzmen, president of the Saltzman-Guenthner Clinic, Ltd. of Mountain Home, announced a large scale remodeling program for the present clinic building.

A portion of the hospital area will be made available for professional office space.

### Dr. A. J. Forestiere is President-Elect Of State A. A. G. P.

The following officers were elected at the Arkansas Academy of General Practice at a group meeting in Little Rock: Dr. John R. Wassell of Little Rock became president of the organization, Dr. Thomas D. Honeycutt of Little Rock was named secretary-treasurer, and Dr. A. J. Forestiere of Harrisburg was named President-elect.

### Dr. James E. Wise Opens New Medical Clinic

Dr. James E. Wise announced the opening of his new clinic on October 20. The clinic, located at Carruth and Elm Streets, is completely modern with the most up-to-date medical and x-ray equipment.

### **Hawkins Opens Clinic**

M. C. Hawkins, Jr., M.D. announced the opening of the Hawkins Clinic on Monday, October 7, at its new location at 403 East Lincoln Avenue in Searcy.

The clinic is open Monday through Friday of each week with consulation by appointment.

### **Dr. Holt Nominee for Medical Post**

A Nashville native has been nominated as president in 1965 of the Shreveport Medical Society.

Dr. Charles S. Holt, son of pioneer citizens of the area, was a Nashville high graduate who went on to Ouachita Baptist College and then medical school. He served his internship at Shreveport where he has established his practice.

Dr. Holt was recently nominated by the committee for the presidency of the Shreveport society in 1965.

### Dr. Harris Goes to California Surgeons' Meet

Dr. Haymond Harris of Newport, president of the Arkansas chapter of the American College of Surgeons, left October 16 for San Francisco, where he represented Arkansas surgeons at the annual meeting of the national organization. Dr. Harris' term as state president runs through June, 1964. Dr. Harris was accompanied to California by Mrs. Harris.

### Dr. Wade, Jr. is Honored by Urologist Group

Dr. H. King Wade, Jr., became president-elect of the South Central Branch of the American Urological Association.

He was elected at the concluding business session of the annual convention in Colorado Springs and will automatically become president of the association in 1964.

### County Medical Assistants Hear Dr. Willie Harris

Dr. Willie R. Harris was guest speaker at a meeting of the Jackson County Medical Assistants at Kelly's New Grill in Newport.

In his talk, Dr. Harris stressed the importance of Exfolitive Cytology as it is used in the early diagnosis of malignant disease. Annual tests of this type provide an opportunity to detect the early stages of the two greatest killers of women, cancer of the cervex and breast.

### Rotarians Hear Talk by Doctor, But His Subject Isn't Medicine

A medical doctor who serves as a general practioner in Mountain Home, Arkansas provided what proved to be a highly interesting progarm at the noon meeting of the Forrest City Rotary Club.

The speaker was Doctor Ben N. Saltzman, and his talk to the Rotarians was not about medicine . . . it concerned the operations of the Strategic Air Command (SAC) on the European front.

Dr. Saltzman is a member of the United States Air Force Reserve. His talk to the Rotarians concerned a recent trip he and several other selected reservists made to various European military installations, including several in both East and West Berlin.

Doctor Saltzman, an experienced and capable speaker used illustrated color slides to take the Rotarians on an imaginary trip as he recollected the points of interest he and the other reservists visited.

His slide tour covered such points as Paris and London, in addition to many points in Germany; and perhaps the most startling thing pointed out by his pictures was the stark contrast between the progress being made in West Berlin and the utter economic stagnation noted in Communist East Berlin.

Doctor Saltzman appeared on the Rotary program as the guest of Rotarian Bill Gibbs.

### Physician Shows Rotary Slides He Made in Alaska

An interesting program concerning his three years as medical director of the Methodist hospital at Nome, Alaska, was presented by Dr. W. A. Woodcock at a luncheon meeting of the Rotary club at the Arlington.

Some of the slides shown in connection with his remarks had to do with medical treatment given Eskimos in the 25-bed modern hospital where he was the only physician and surgeon from Anchorage to the North Pole. Others had to do with his hunting expeditions and with the scenic

beauty to be found in Alaska.

Dr. Woodcock recalled his work at the hospital as a "fascinating experience" with many interesting and innisual problems.

### **Panel of Doctors Discuss Respiratory Diseases**

Dr. Joe Beasley, Dr. Herbert Jones, Dr. J. W. Hard and Dr. E. A. Shaneyfelt participated in a panel discussion of respiratory disease at the annual board meeting of the Mississippi County Tuberculosis Association in Osceola in October.

## Dr. Paul M. Zoll Discusses Electronic Monitoring and Treatment of Cardiac Abnormalities

Dr. Paul M. Zoll, specialist in cardiovascular disease, discussed electronic monitoring and treatment of cardiac abnormalities at a meeting of the General Staff of the Arkansas Baptist Hospital in Little Rock in October.

# Dr. Amos N. Johnson Speaks at the University of Arkansas Medical School

Dr. Amos N. Johnson of Garland, North Carolina, chairman of the Board of Directors of the American Academy of General Practice, addressed the senior class at the University of Arkansas Medical School in October. He was invited by the faculty as a part of its pre-internship program to aid medical students in determining a field of graduate study.



### **Vocational and Counseling Service for Diabetics**

A. H. Kantrow, *Diabetes* 12:454 (Sept-Oct) 1963
The Vocational and Counseling Service of the New York Diabetes Association was established in 1961. The report describes the first 100 clients and the work of the service. Problems include medical, social, emotional, educational, career, and employment. Blind diabetics present special problems in medical management, rehabilitation, retraining and home care. The new service provides for the diabetic with social case work treatment, health education, group counseling for adolescents and referral for medical care and specialized services. The service acts as a source of information regarding diabetes for public and private agencies, hospitals, schools, and employers.

### Clinical Experience with Dexamethasone

J. Gamarski, Rev Bras Med 20:314 (June) 1963
Treatment of 60 patients with various types of rheumatic disease with dexamethasone, in the initial dosage of 1.5 to 4 mg daily, achieved results which were excellent in 26 patients, good in 16, and moderate in 17; only one patient (of the two with gout) failed to benefit from the treatment. Side effects were those commonly observed with corticosteroids, but there was no water and salt retention, and no alteration was observed in blood pressure, pulse, or central nervous system. The author considers dexamethasone more effective than either prednisone or prednisolone in treating rheumatic diseases, provided the dosage is at least 3 mg.



### PROCEEDINGS OF SOCIETIES

### **Craighead-Poinsett County**

A mass oral polio immunization campaign for Craighead-Poinsett counties has been announced by Dr. Vestal Smith of Marked Tree, president of the local medical society. The first "Sabin Sunday" was scheduled for November 17th. Dr. C. E. Kemp is general chairman of the program for both counties.

### Mississippi County Medical Society Holds Meeting

Dr. Bill Morse, a Memphis Neurologist, addressed the Mississippi County Medical Society at its meeting in October. Physicians from Blytheville Air Force Base were guests of the county society for this meeting. Dr. Gene Ball, president of the group, discussed the administration of Sabin Oral Vaccine to school children throughout the county.

### **Boone County Hears Discussion**

Boone County physicians heard a discussion on a proposed water filtration plant for Harrison at a meeting in October. A representative of the State Board of Health, the city engineer and the city water superintendent participated in the panel discussion on the subject. The physicians voted to endorse the proposed plant.

### Pulaski County Observes National Health Week

The Pulaski County Medical Society observed National Health Week in October in connection with an effort to point out to Pulaski County citizens the progress in medical sciences during the past 25 years. Dr. Robert Watson is president of the Pulaski County Medical Society. The Pulaski County Society also has announced that medical examinations of more than 600 students entering their first year of junior high school were com-

pleted by volunteer members of the Society. Dr. John Harrell is chairman of the Society's School Health Committee.

### Fifth District Society

The Fifth District Medical Society met in Camden in October and was addressed by Dr. E. B. D. Neuhauser, world-renowned radiologist of Boston, who discussed "Infection and Obstruction of the Lower Urinary Tract in Children." Dr. B. D. King of Camden is secretary of the District Medical Society and arranged the program for the meeting.

### **Pulaski County**

An article in the ARKANSAS DEMOCRAT announced that the Little Rock hospitals have abandoned regulations set up two years ago to control visiting. The article quoted Dr. Robert Watson, president of the local medical society, as expressing regret that the visitor arrangement could not be maintained and controlled.

### Columbia County Completes Polio Immunization

Columbia County completed the Sabin Oral Polio Mass Immunization on October 6th. The county wide participation ranged from 60 to 65% with many of the residents having participated earlier in programs of bordering communities.

The excellent cooperation of the participants, lay assistants, and para-medical assistants gave evidence of the popularity of this program. In a county with only thirteen active physicians, ten vaccination stations did constant medical supervision.

Surplus funds from the polio Sunday contributions are to be used for nursing scholarships for qualified students.

### **Medical Society Starts Nursery Scholarship**

The Columbia County Medical Society is establishing a nursing scholarship with surplus money left from the society's polio vaccine clinics.

The scholarship will go to some girl in Columbia County who plans to enter nurses training.

Dr. John Ruff said that the surplus was caused by mass purchase of the vaccine and free help from volunteers.

### **Charity Dollars Purchase Lifesaving Machine**

Donors to Greene County Charities Inc., last year made possible the purchase of a lifesaving "heart machine" for Community Hospital.

A total of \$1,772.80 was allocated for "heart work" as a result of the first annual united drive.

The machine known as a delibrillator is designed for emergency use, when a heart has stopped its function, and when timely placed in operation may re-start its pulsations and adjust the heart beat rate until nature can again take over.

### The Dallas Southern Clinical Society

The Dallas Southern Clinical Society announces its 1964 Honor Guests for the Spring Clinical Conference held March 16-18, 1964. It will be held at 433 Medical Arts Building, Dallas, Texas.

Honor Guests include:
JOHN D. BRIDGESPediatrics
High Point, North Carolina
BENTLEY P. COLCOCKSurgery
Boston, Massachusetts
EDWIN H. ELLISONSurgery
Milwaukee, Wisconsin
J. HARTWELL HARRISON Urology
Boston, Massachusetts
JOHN R. HASERICKDermatology
Cleveland, Ohio
LOUIS M. HELLMAN _Obstetrics-Gynecology
Brooklyn, New York
JEROME A. HILGEROtolaryngology
Saint Paul, Minnesota
WILLIAM F. HUGHES Ophthalmology
Chicago, Illinois

JOHN M. McLEAN	Ophthalmology
New York City, New York	
JOHN P. MERRILL	Internal Medicine
Boston, Massachusetts	
BEN M. PECKHAMO	bstetrics-Gynecology
Madison, Wisconsin	
DANIEL C. RIORDAN	Orthopedics
New Orleans, Louisiana	
WILLIAM H. SAUNDERS	Otolaryugology
Columbus, Ohio	
GEORGE E. SCHREINER	Internal Medicine
Washington, D. C.	
MARVIN STEIN	Psychiatry
New York, New York	
ORVAR SWENSON	Surgery
Chicago, Illinois	
FRANK M. TOWNSEND	Pathology
San Antonio, Texas	
STANLEY M. WYMAN	Radiology
Boston, Massachusetts	67

### Society of Clinical Hypnosis to Sponsor Program

The Arkansas Society of Clinical Hypnosis sponsored a program at the Marion Hotel Saturday and Sunday, December 7 and 8, 1963.

Dr. Milton H. Erickson was the guest speaker. Program:

Saturday 1:00 to 4:00 p.m. In the Ball Room. Orinentation and introduction to Hypnosis.

Induction Techniques.

Question and answers.

Saturday 7:00 p.m. In the Continental Room. Dinner Meeting.

Doctor Erickson, after dinner speaker.

Sunday 9:00 A.M. to 12:00 in the Ball Room. Therapeutic Hypnosis.

Inductions.

Questions and Answers.

Registration for this program for physicians and dentists was \$15.00 including Dinner Meeting. There was no registration fee for wives and guests, and only \$5.00 for the Dinner Meeting.



Arkansas County Medical Society announces that DR. FRANCIS M. HENDERSON has been added to its roster of members. A native of St. Louis, Missouri, his premedical education was obtained at Ouachita Baptist College at Arkadelphia, Arkansas. He received his M.D. degree from the University of Arkansas Medical School in 1960. He practiced at the St. Louis Children's Hosipital in St. Louis from 1961-1963. Dr. Henderson's office is now located at 123 East Third in Stuttgart, Arkansas. His specialty is pediatrics.

DR. JERRY C. HOLTON is a new member of Arkansas County Medical Society. He was born at Little Rock, Arkansas, and his preliminary education was obtained at Hendrix College in Conway, Arkansas. In 1962, he received his M.D. degree from the University of Arkansas Medical School. His office is at 509 South Main in Stuttgart, Arkansas. Dr. Holton is a general practitioner.

A new member of Baxter County Medical Society is DR. JAMES H. DAVIS. A native of Lit-

tle Rock, Arkansas, he received his preliminary education from Hendrix College at Conway. His M.D. degree was obtained from the University of Arkansas Medical School in 1962. Dr. Davis has offices at the Salem-Ash Flat Clinics. He is a general practitioner.



### **Medical Auxiliary Has Meeting**

The Womans Auxiliary to the Jefferson County Medical Society met Friday at a luncheon meeting at the Plantation Embers Restaurant.

The president, Mrs. W. R. Meredith, presided over the business period. Mrs. R. D. Dickins, membership chairman, introduced two new members—Mrs. Richard H. Flowers Jr. and Mrs. A. D. Tisdale.

The program was presented by Dr. Joe Norton of Little Rock, Dr. Norton is chairman of the Arkansas Medical Society Committee of National Legislation.

### **Head Medical Auxiliary**

Mrs. Harlan Hill is the new president of Pulaski County Medical Auxiliary. Mrs. Robert Henry is president-elect, and Mrs. Harold Langston is recording secretary. Mrs. Robert Stainton, is treasurer.



## **BOOK REVIEWS**

PHYSIOLOGY OF THE CIRCULATION IN HUMAN LIMBS IN HEALTH AND DISEASE, By JOHN T. SHEPHERD, M.D., M.Ch., D.Sc. Professor of Physiology, Mayo Foundation Graduate School, University of Minnesota, Rochester, Minnesota, Consultant, Section of Physiology, Mayo Clinic, Formerly Reader in Physiology, The Queens University of Belfast, p 416, Illustrated, Published by W. B. Sanders Company, Philadelphia and London, 1963.

This is an extremely interesting book and of clinical value to all practicing physicians. The book has excellent chapters on the nervous control of the blood vessels in the skin and muscles. The affects of various agents on the blood vessels are discussed; cold, heat, exercise, sympathectomy, etc. Various pathological conditions are reviewed. For example, it has a chapter on fainting. Another chapter is on nicotine and smoking. The book is well written. Each chapter has its own bibliography. There are a number of charts but very few illustrations. This book is heartily recommended to medical students, house staff and practicing physicians.

CURRENT DIAGNOSIS AND TREATMENT, by HENRY BRAINERD, M.D., Professor of Medicine and Chairman, Department of Medicine, University of California School of Medicine (San Francisco), and Physicianin-chief, University of California Hospitals (San Francisco). SHERDON MARGEN, M.D., Associate Professor of Human Nutrition, Department of Nutritional Science, University of California (Berkeley) and Associate Professor of Social Welfare, University of California (Berkeley) Research Biochemist, Department of Biochemistry, University of California School of Medicine (San Francisco).,

MHLTON J. CHATTON, M.D. Assistant Clinical Professor of Medicine University of California (San Francisco) and Stanford University (Palo Alto) Schools of Medicine, and Geriatric Consultant, Palo Alto Medical Clinic. pp 843 published by Lange Medical Publications, Los Altos, California, 1963.

This book of 843 pages is a brief compendium of information pertaining to the diagnosis and treatment of diseases. As such, each article is necessarily brief and is in outline form. The text is accurate and well written. There are no illustrations. There are a few references. The reviewer has no adverse criticism about the book; in view of the profusion of similar books, one wonders what exact niche the author seeks for this text. This book is recommended as being a handy reference of the sort that might be left on the ward as a guide for futher reading.

THORACIC SURGERY, By the MEDICAL DEPART-MENT, UNITED STATES ARMY, Prepared and published under the direction of Lientenant General Leonard D. Heaton, The Surgeon General, United States Army. Editor in Chief, Col. John Boyd Coates, Jr., MC, USA, Editor for Thoracic Surgery, Frank B. Berry, M.D. Associate Editor, Elizabeth M. McFetridge, M.A. pp. 394, Published by the Office of the Surgeon General, Department of the Army, Washington D. C., 1963.

This book is a publication of the Medical Department of the United States Army, and was prepared and published under the direction of Lt. Gen. L. D. Heaton. The book is extremely interesting and represents a compendium of experiments from World War II. The participating authors are authorities in their respective fields. There is an interesting section on the Military Medical History by Dr. F. B. Berry. Any physician who has served in the Military forces will be greatly interested in this book. The authors include: Frank B. Berry, M.D., Brian Blades, M.D., Lyman A. Brewer III. M.D., Thomas H. Burford, M.D., B. Noland Carter, M.D., Michael E. DeBagey, M.D., Ernest A. Doud, M.D. and Dwight Emary Harken, M.D. This book is heartily recommended.

## TUBERCULOSIS



### ABSTRACTS

Sponsored by Arkansas Tuberculosis Association

### EMPHYSEMA AND THE AGING LUNG

Study of the morphology, mechanics of breathing, and gas exchange of the lungs of aged people and comparison with the lungs of patients with obstructive emphysema leads to the conclusion that "senile emphysema" is not a disease entity.

LEON CANDER, M.D.; WILLIAM S. BLUMENTHAL, M.D., Hahnemann Medical College, Philadelphia; Geriatrics, June, 1963.

To determine whether "senile emphysema" exists as a disease entity, a study was made of the pulmonary alterations associated with aging, and these were compared with the alterations described as "senile emphysema" and those in obstructive emphysema.

As for morphologic differences, the absence of significant airway obstruction in old persons is indicated at autopsy by the fact that their lungs will collapse readily, but the lungs of a patient with obstructive emphysema, where functionally significant airway obstruction is always present,

do not collapse.

Furthermore, the pattern of the air spaces has not been found to be altered with age, but the normal pattern is disrupted in obstructive emphysema and lung tissue is destroyed. And there would seem to be no specific age changes in the structure of the lungs or thorax which could serve as the basis for a disease entity called "senile emphysema."

### RESPIRATORY FUNCTION CHANGES

As for alterations in pulmonary function with advancing age, there is an increasingly uneven distribution of both alveolar gas and pulmonary capillary blood flow with advancing age which results in less effective pulmonary function through two contrasting mechanisms.

In some of the alveoli, ventilation is excessive in relation to blood flow and, thus, cannot be utilized; in others, ventilation is deficient in relation to blood flow so that oxygen uptake by the pulmonary capillary blood is not optimal. These changes are slight in normal aged persons and in those with barrel chest deformity. In obstructive emphysema, they are much greater and their effects are more serious.

### MBC AND AGE

For many years the maximum breathing capacity (MBC) has been used to assess the bellows function of the lungs-thorax system. The relation of the MBC to age has been well established in large groups of subjects. It has been shown that the MBC rises rapidly from childhood to reach a peak at about age 20 and then declines in a relatively linear fashion with age. There is a more rapid decline with age in men than in women. The presence of barrel deformity of the chest is not associated with a further decrease in the MBC.

Because of criticism that the MBC test is too strenuous in severely incapacitated patients, several simple and less fatiguing tests have been introduced to provide equivalent information. All are based upon quantitative analysis of some portion of the maximal effort spirogram. One such test measures the flow rate of that portion of air expired from the first 200 ml. to 1,200 ml. of the forced expirogram. This is the maximal expiratory flow rate (MEFR).

The MEFR reaches a peak during the third decade and then declines in a linear fashion with age in men. The years treat women more kindly than the men in respect to the MEFR, there being no significant change with age in women. By comparison, the MEFR is reduced in patients with obstructive emphysema, regardless of age.

### MECHANICS OF BREATHING

Although the changes in mechanics with aging might possibly be accounted for solely by alterations in the thoracic cage, recent studies of the mechanical properties of the lungs alone make this improbable. It has been demonstrated that with increasing age less intrapleural pressure is required to achieve a given degree of lung inflation. Age changes in the thoracic cage or its action are not solely responsible for the altered behavior of the mechanical properties of the respiratory apparatus. Important changes occur in the lungs themselves.

Airway resistance is always significantly elevated in obstructive emphysema and is probably the most important factor contributing to the decreased MBC and MEFR in this disease. De-

spite the intrinsic changes in the mechanical behavior of the lungs, airway resistance remains normal in the elderly.

Although a significant decrease has been reported with age in the maximal pulmonary diffusing capacity for oxygen in normal subjects, no correlation was found between the breathholding pulmonary diffusing capacity for carbon monoxide and age. Since the diffusing capacity for oxygen is limited to some extent by pulmonary blood flow and the cardiac output decreases with age, an age correlation for this measurement is not surprising. However, the breath-holding diffusing capacity for carbon monoxide, which is not limited by blood flow, does not show an age correlation.

In patients with obstructive emphysema there is progressive decrease in pulmonary diffusing capacity with increasing severity of the disease, regardless of age.

Physiologic capacities deteriorate with age and the various aspects of lung function are no exception. It is not yet known whether senescence is the result primarily of genetically controlled involution or of repeated exposure to minor injuries, leaving a permanent mark.

### EFFECT OF AIR POLLUTANTS

Unlike other viscera, the lungs are continuously exposed to the injurious effects of the sea of polluted air in which so much of the world's population lives. Even though data are scarce, environmental effects on lung function must be differentiated from those of aging as such. Of the various environmental factors under investigation, other than industrial pollutants, cigarette smoking has been the one most implicated in the production of acute and chronic changes in lung function.

Although changes in lung function with age are qualitatively similar to the functional disturbances seen in the early stages of obstructive emphysema, the changes in obstructive emphysema are quantitatively more extreme. More significantly, the physiologic changes in obstructive emphysema are accompanied by dyspnea and the patient's exercise tolerance is limited by pulmonary disability.

Thus, neither a morphologic nor a physiologic basis exists for a disease entity called "senile emphysema."

# THE OURNAL OF THE Arkansas MEDICAL SOCIETY

Vol. 60 No. 9

FORT SMITH, ARKANSAS

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# New Books



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method. Here are but a few: Newer knowledge and Therapy of Chorea—Use of Flagyl in Therapy of Trichomoniasis-Management of Transfusion Reactions and Shock—The New Vaccine for Prevention of Measles— Treatment of Episodic Cerebral Circulatory Syndrome— Streptokinase and Fibrinolysin in Treatment of Stroke-Newer Agents in Therapy of Bacterial Pneumonia-Effective Measures in Managing Hemochromatosis and Hemosiderosis—Improvements in Cardiac Pacemaker— Newer Treatment of Salmonella Infections—Therapy of

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legend giving the history and symptoms of the patient and the techniques of examination (angle of vision, peculiarities of lens and irrigation, degree of bladder distention). Here are but a few of the many conditions and anatomical views that are pictured: Subacute follicular cystitis-Many varieties of bladder stones-Dome of atonic bladder-Stricture of the bladder neck-Sarcoma of the bladder—Erupting prostatic abscess—Many views showing results of transurethral prostatectomy-adenoma

of the prostate.

By H. J. Reuter, M.D., Private Urologic Hospital, Stuttgart, Germany. Translated by Hubert G. W. Frohmüller, M.D., Fellow in Urology of the Mayo Clinic, Rochester, Minnesota. 114 pages, 65% x 9½", with 178 figures, 105 in color. Ahout \$15.00.

New—Just Ready!

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### GASTROENTEROLOGY New (2nd) Edition! Bockus'

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## PSEUDOXANTHOMA ELASTICUM

A Review with Case Reports of Two Sisters

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PSEUDOXANTHOMA ELASTICUM IS AN uncommon inherited disorder which is transmitted as a recessive trait and appears to be partially sexlinked to the female chromosome (1, 2). In most series the condition is said to be more common in the female; however, in a review of 103 cases by Connor et al., (7) the incidence in both sexes was equal. This disorder is characterized clinically by xanthoma-like skin lesions, angioid streaks of the retina, and signs of arterial involvement, such as diminished perepheral pulses, hypertension, and gastrointestinal bleeding.

The dermatologic manifestations were first described by Balzer (3) in 1884 and classified by him as one of the xanthomatoses. Darier (4) in 1896 correctly attributed the condition to elastic tissue degeneration and defined the histopathology. Grönblad and Strandberg (5, 6) in 1929 first described the relation between the retinal and skin lesions.

### **Case Reports**

Case I. (L. T.) A fifteen year old Caucasian female was referred to this clinic for the evaluation of skin lesions present since age six. Except for the skin complaint she was asymptomatic. The Past Medical History and the Review of Systems were noncontributory. The Family History revealed a sister (reported below) and a maternal cousin in Germany with similar lesions. Two other sisters had no symptoms of the condition, but ophthalmoscopic examination did reveal suggestive but nondiagnostic changes of the retina. The mother and maternal grandparents were hypertensive but had no evidence of the disorder. The father had no signs of this disease. Physical examination revealed a blood pressure of 110/70.

The visual acuity of both eyes was 20/20 uncorrected. Examination of the optic fundi revealed



Figure 1: Angioid streaks, larger than the blood vessels, but lighter, can be seen coursing out from the disc toward the periphery.



Figure 2: The raised plaque-like lesions arranged linearly can be seen on this patient's neck.

angioid streaking of the retinae and evidence of old chorioretinitis at the disc margins. (Figure 1.) Yellow, plaque-like lesions were noted on the neck and in the axillae. (Figure 2.) The right posterior tibial pulse was absent. The physical examination was otherwise not remarkable. Laboratory work included a normal hemogram, urinalysis, serum calcium, serum phosphorous, and alkaline phosphatase. A chest roentgenogram was negative. Skin biopsy revealed changes typical of pseudoxanthoma elasticum. (Figure 3.)



Figure 3: The elastic fibers of the corium, which appear fragmented and curled, are stained black by van Gieson's stain. (x440)

Case II. (A. T.) A thirteen year old Caucasian female sibling of Case 1 was noted to have similar skin lesions of the neck at age five. Except for these lesions and diminished visual acuity she was asymptomatic. The Past Medical History and the Review of Systems were noncontributory. The Physical Examination revealed a blood pressure of 98/66. The visual acuity of O. S. was 20/200and of O. D. was 20/100. The vision was corrected to 20/25 in both eyes with glasses. Examination of the fundi revealed angioid streaks of the retinae. Typical lesions were observed on the neck, in the axillae, and in the right inguinal area. Both posterior tibial pulses were diminished but palpable. The physical examination was otherwise negative. Laboratory studies included a normal hemogram, urinalysis, serum calcium, serum phosphorous, and alkaline phosphatase. A chest roentgenogram was negative.

### Discussion

Pseudoxanthoma elasticum is usually diagnosed between the second and fifth decades. The clinical findings are manifestations of a connec-

tive tissue abnormality. Usually the skin lesions or diminished visual acuity will result in the patient's seeking medical advice.

The skin lesions are typically yellow, plaquelike lesions in a linear distribution resembling Moroccan leather or freshly plucked chicken skin (8). These may range from a barely perceptible roughening of the skin to a generalized involvement with cutis laxa. The lesions are usually symmetrical, involving the neck, axillae, inguinal areas, breasts, periumbilical, and popliteal areas. The mucous membranes of the mouth, vagina, and rectum may be involved (9). The areas of skin involvement are prone to secondary infection, and occasionally perinodular hyperemia and nodular tenderness occur (10). Microscopically there is swelling, fragmentation, and curling of the elastic fibers of the mid and deep corium. (Figure 3.) The elastic tissue is greatly increased and an occasional Langhan's giant cell may be noted (10). Calcium (10) and iron (7) deposition is increased in this material. Connor (7) found no involvement of the vessels of the skin.

It has been suggested that this disorder involves collagenous tissue which in the process of degeneration takes on the staining qualities of elastic tissue (11). McKusick reviewed this evidence and pointed out that: (a) normally the skin contains very little elastic tissue, and that it is not enough to account for the pathologic findings; (b) arteries that are involved are muscular arteries, the media of which contain collagenous, not elastic tissue, and the internal elastic membrane of these vessels is intact; (c) the width of the fibers is characteristic of collagen and the electron microscopic characteristics are those of collagen; (d) other elastic tissues such as lung are spared (1). Others, however, using electron microscopy, microincineration, and elastase digestion techniques, consider the original theory of elastic tissue degeneration to be correct (12, 13, 14, 15). In addition Smith et al. (16), using histochemical techniques found no evidence of collagen degradation.

The optic fundus reveals the grey to red-brown angioid streaking of the retina, usually bilateral (17). These streaks seem to fan out from the disc and may vary up to several times wider than the veins. Pathologically, these are fissures in the internal elastic membrane (Bruck's membrane) of the choroid. The pathogenesis of this is not understood, but studies of enucleated eyes cor-

relate the ophthalmoscopic findings with the pathology of the internal elastic membrane (18). Other retinal findings include macular hemorrhage and central chorioretinitis (8). Although total blindness is rare, central scotomata occur as a result of macular hemorrhage. If this occurs it is usually by the fifth decade. Visual difficulties are common, occurring in 69 out of 95 patients (73 per cent) in the series reported by Connor et al. (7).

Gastrointestinal hemorrhage occurs commonly, and this diagnosis should be considered in any patient with gastrointestinal bleeding. Grossly, the hemorrhage is due to multiple gastric mucosal tears which result from vascular involvement of the gastric and mucosal vessels (19). Bleeding sites such as a peptic ulcer or an esophageal varix are rare. Other reported bleeding sites are the nose, uterus, bladder, and subarachnoid space (8). The management of intestinal bleeding, once the diagnosis is established, is conservative.

Involvement of arteries of the brain, eye, thyroid, heart, mesentery, pancreas, kidney, uterus, and peripheral vessels has been reported (9). Arteriosclerotic vascular disease occurs prematurely in these patients (7). The loss of elasticity and caliber of the vessels may lead to intermittent hypertension, intracranial and aortic aneurysms, and angina pectoris. Typically, one or more peripheral pulses may be absent or diminished, and this abnormality has been previously reported as early as age sixteen (7). In our oldest patient (age fifteen) an absent posterior tibial pulse was noted on separate examinations. Peripheral vessel calcification can be demonstrated by roentgenography, with the earliest reported evidence noted during the ninth year of life (20).

A rare finding is the association of pseudoxanthoma elasticum, angioid streaks, and osteitis deformans (7, 21, 22). Angioid streaks have also been noted in association with sickle cell disease (23). Unexplained association of pseudoxanthoma elasticum with diabetes mellitus, hyperthyroidism, and psychoses has been reported (10).

Although there is no specific treatment, Berlyne (8) reports that the prognosis is good, but fatal hemorrhage, cerebrovascular accident, or myocardial infarction may occur.

### Summary

Pseudoxanthoma elasticum is a hereditary disorder, possibly sex-linked, occurring between the second and fifth decades. This connective tissue disease typically involves the skin and the retina, although involvement of the other organ systems has been reported. The two cases presented illustrate the findings. Even though there is no specific treatment, the prognosis is good.

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## **CHANGING PROFILES\***

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Commencement addresses always remind me of the letter a little boy sent to his Aunt to thank her for a birthday gift:

"Dear Aunt Emma,

I have always wanted a pin cushion,

but not very much."

You have worked hard and waited a long time for this occasion and all that it implies. I shall try to add to your happiness by making my remarks brief.

If you remember anything I say in the months and years to come, I hope it will be this:

Change is inevitable, like death and taxes; you either adapt to it or you perish. As new members of the health professions, with rich traditions and noble heritage, do not resist change—give it wise guidance and direction. Only in this way can you remain free men and women in a free society.

A youngster was asked to write an essay on Socrates. This is what he wrote: "He went around giving people advice; they poisoned him." With this in mind, let me try to tell you how change is affecting your university and you, as individuals, whether you're in your own office, a hospital, a clinic or wherever you may be.

Lets discuss your university first. Not too many years ago, the essential mission of a university was considered to be that of dispensing the accumulated knowledge of the past, passing on to each succeeding generation the best that had been said or thought. This is not true any longer. A great university as yours must eternally seek new knowledge as well as dispense the old—it must continually pursue knowledge and excellence.

This requires your faculty to engage in research and in the graduate training of research workers and teachers. Their primary mission is still that of teaching the undergraduate, but this mission cannot be achieved without research and research training programs.

Thirty-three years ago, a generation, I graduated from medical school. I am sure the research effort then was limited to a few thousand dollars—now, this same medical school has five million dollars of research and training grants. The ex-

plosion of new knowledge in the health professions and the necessity to contribute to this knowledge as well as to teach required this changing emphasis. Your own university has accepted this philosophy and your education in such an environment was all the better for it.

The last twenty years have brought more changes than any other period in history—change and growth in the material means of life—changes in social, political and economic problems. These changes are due in large part to the miraculous progress in science and technology. Whether this dominant force of science will be a blessing or disaster will depend upon the use men make of science.

The health sciences have played a major part in these changes. A word of caution is necessary however. There is a dominant impression that health depends on the treatment of the sick—that the essence of medical care is having an operation—and that surgery is the ultimate of medical achievement. Actually, the marked improvement in health, as indicated by lower mortality and increased life expectancy at birth results primarily from the fact that we do not become ill—not from what happens to us when we are already sick. The most important factors have been an improved environment, a better standard of living, and effective preventive agents.

This is further evidence that universities and you graduates cannot remain aloof from the world of practical affairs. The barriers of the past that have separated you and your professional schools from the affairs of other men have disappeared. This is good, not bad, but you must accept and adapt to it.

Now lets talk about you, the new members of the health professions. What changes must you meet. The first one will occur in a few minutes. I want you to note the invisible scissors in the hands of the dean when he gives you your diploma—with these he will cut the umbilical cord of your predoctoral education and undergraduate education—you are now on your own. Your future in your profession is in your hands—without the careful, critical nurturing of your present teach-

Delivered at the Commencement of the University of Arkansas School of Medicine, June 9, 1963

ers. How well you do in the years ahead, will depend largely on how sound is the bone of learning during these last several years and how well you have acquired the habit of curiosity, appraisal and skepticism.

What are some of the other changes you will face?

- (1) The health professions will come to recognize that they are social sciences and as such will be affected more and more by the dynamic economic, social and political factors in society.
- (2) Health care will become more and more a basic right, not just a privilege.
- (3) Comprehensive health care, preventive, curative and restorative, will be our objective, and, of these, the greatest emphasis will be on prevention.
- (4) Progress in health care creates increasing demand and utilization—these result in changing patterns of care and higher costs.
- (5) Governmental influence—local, state, and Federal—through increased responsibility in reimbursement for care, will result in more controls related to quality, availability, comprehensiveness, costs, and financial accountability.
- (6) Physician manpower shortages will continue, requiring increased production and utilization of auxiliary health personnel.
- (7) Patterns of care and the demand to narrow the yawning gap between knowledge and its application will require adding new disciplines to our health team and greater interdependence of action in providing total care.
- (8) Hospitals will become the major focus for health services, the real community health center.
- (9) Specialization will become even more a dominant characteristic of the health professions.

The health sciences are social sciences, phenomena of society, and not distinct and separate from it. Although our professions, more than others, guide and shape the direction of health services, the final decision is made by the public. Therefore, services developed to serve society must be based upon an understanding of its needs. This understanding is vital in applying effectively the vast body of knowledges in the health sciences, in our professions.

This, in turn, requires that we look outside the antiseptic walls of our classrooms, laboratories, clinics, offices and hospitals to learn what is happening in society, the social, political and economic changes occurring, and how these affect our application of knowledge. You and I have not done enough of this—we talk too much to ourselves—we resist change instead of recognizing its inevitability and attempting to give it sound and intelligent direction. We are too inclined to back into the future instead of facing it squarely, its challenges, and its opportunities.

### Conclusion

The President of M. I. T., in his traditional charge to the graduates at their 1961 Commencement exercises, made the following statement:

"It should be equally clear that technical competence alone is not sufficient to meet the greatest crisis that faces the free world—the preservation of our democratic institutions. The question is simply this: can a democracy in our tradition meet and survive the challenge of a highly competitive, highly organized central authority? The essence of our kind of democracy is a belief in the value of the individual—a belief that each and every citizen has not only the right, but also the responsibility to participate actively in forming our laws, in selecting our leaders, in shaping the character of our institutions. Democracy fails when a preoccupation with private privilege leads to neglect of public duty.

"As citizens we can freely criticize the processes and decisions of government; but criticism alone serves little useful purpose unless it is followed by constructive action. The willingness to leave important affairs to someone else becomes a blight upon the processes of a free government. One may, for example, view with alarm the intrusion of the Federal Government into the enforcement of civil rights, into plans for old age relief and medical assistance, into the subsidy of education. But we should ask ourselves honestly to what extent this has come about because of a failure first to come to grips with such problems, in the local communities.

"Democracy gathers its force from the grass roots. Civic virtue, in short, begins at home. It starts humbly and in small affairs. It involves everyone."

There is an expression that "the happy man is one who lives in the past." I like better Hawthorne's comment in his *House of Seven Gables*: "The world owes all its onward impulses to men ill at ease." I hope you will go happily from this commencement, respectful of the past, but "ill at ease" for the future. Then you will be prepared to make things happen, not just wait for them

to happen. These are the marks of a great profession—this must occur if our professions and our universities are to meet the needs of people in transition, and, equally important, if we are to preserve and enhance our fine traditions and freedom. If you do not act, rest assured that someone will. The will of the people is like a grist mill—it grinds slowly, but it grinds inexorably.

Now as you and your parents and wives and friends come to relish their final culmination of

years of labor and sweat, dedication and devotion, I want to remind you of the words of a Greek philosopher, commenting upon the fall of the Athenian democracy:

"The state says only free men shall be educated; God says only educated men will be free."

May I wish for each of you much happiness and great satisfaction in the years ahead and a warm welcome to the family of the health professions.



# Intestinal Mucosal Mechanisms Controlling Iron Absorption

M. E. Conrad and W. H. Crosby, *Blood* 22:406 (Oct) 1963

Radioautographic studies provide evidence to support a concept of the mechanism whereby the small intestine controls absorption of iron. As the columnar epithelial cells of the duodenal villi are formed, they incorporate a portion of intrinsic iron from the body's iron store, the amount depending upon the body's requirement for new iron. It is predicated that with iron excess an iron-receptor mechanism in these cells is saturated with intrinsic iron; this then prevents the cell from accepting dietary iron. In the normal state of iron repletion, the receptor mechanism remains partly unsaturated, allowing small amounts of dietary iron to enter the cell. Part of this proceeds into the body to satisfy any metabolic requirement for iron. Part is retained in the mucosal epithelial cells to complete the saturation of the iron-receptor mechanism. This bound iron is subsequently lost, when the epithelial cells are sloughed at the end of their life cycle. In iron deficiency it is postulated that the receptor

system is inactive or absent, so that entry of dietary iron into the body is relatively uninhibited.

# Pathology of Liver Cirrhosis in Patients With Cystic Fibrosis of the Pancreas

K. J. Shier and R. C. Horn, Jr., Canad Med Ass J 89:645 (Sept 28) 1963

The peculiarities of the liver cirrhosis that occurs in cystic fibrosis of the pancreas are the result of a number of factors. Two factors which have received little attention in the past became evident in a study of patients dying of liver disease. It is postulated that the onset of the disease in fetal life disturbs the development of the bile duct system, which is the key to normal structural relations in the liver. Focal lesions of intrahepatic biliary atresia then complicate the manifestations of the "multilobular biliary cirrhosis." Secondly, scars formed in the liver during infancy will distort subsequent organ growth considerably, resulting in bizarre nodularity. Despite massive deformation large portions of the liver may still consist of primary parenchyma and account for the usually normal liver functions.



# Let's Set the Record Straight

Joe Verser, M.D.

AGE EARNERS ARE BEING told by advocates of the King-Anderson Bill that if Medicare is enacted into law that the cost to them in actual taxes will be only \$1.00 per month. It behooves us to set the record straight.

At the recent King-Anderson hearings before the House Ways and Means Committee, which I attended, Chairman Mills in questioning Mr. Robert Meyers, Chief Actuary for the HEW, pointed out, and Mr. Meyers agreed, that the Social Security trust fund for OASI was currently out of actuarial balance by .31% of payroll and that if the King-Anderson Bill were to be added the Social Security tax rate would have to be increased by 1% rather than ½% as is proposed in HR 3920.

It well may be that the initial cost to the average worker for Medicare may be only \$2.00 per month in additional taxes, but what about the ultimate cost? It is the ultimate cost of any government program, rather than the initial cost, which all of us should be worrying about. As late as 1949 the average worker was paying only \$30.00 a year Social Security tax. Today he pays an annual Social Security tax of \$174.00 and Congress has already approved additional increases so that by 1968 he will be paying \$222.00 per year in Social Security tax. This is over seven times what he was paying in 1949 AND WITH-OUT ANY MEDICARE PROVISIONS. This will be a 45/8% tax on employee and employer a total payroll tax of 91/4%. Yet the late President Roosevelt in 1936 stated he could never envision a total Social Security tax of over 6%. Evidently

the early Social Security planners failed to take into consideration the high speed of creeping withholding. As late as 1950 the Social Security people stated that the Social Security benefits would not reach 12 billion until the year 1999. Just twelve years later, in 1962, 13 billion dollars was paid out in benefits. Does anyone actually know what will be the ultimate cost of the Medicare program?

In February, 1962, Abraham Ribicoff, Secretary of HEW, said he doesn't think "The American people will go for more than 10% compulsory Social Security payroll withholding taxes." But Congressman Cecil R. King, co-author of the King-Anderson Bill, says that it is financially sound because the government "can always increase taxes". Mr. Wilbur Cohen, who is credited with writing the King-Anderson Bill and would help administer it, told the Senate Finance Committee that he envisions an eventual payroll tax of 20% on a base of \$9,000.00 . . . or \$75.00 a month for employee, \$75.00 a month for employer and more than \$112.00 a month for the selfemployed. This would be an increase of 411% over the present tax.

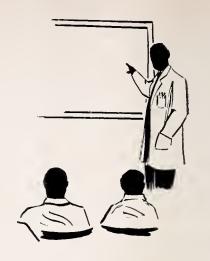
Do statements like these sound like the Medicare tax could remain at \$1.00 or \$2.00 per month? In view of these statements by the Social Security people how can anyone believe that Medicare will actually cost only \$1.00 per month?

We, as physicians, should talk to the wage earners and explain the true facts.

Joe Verser, M.D., President Arkansas Medical Society

## TEACHING SEMINAR

University of Arkansas Medical Center Little Rock, Arkansas



## DRUG THERAPY OF MULTIPLE MYELOMA\*

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University of Arkansas School of Medicine,
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ALL THERAPY OF MULTIPLE MYELOMA is palliative rather than curative. The clinical manifestations of the disease (Table 1) are attributed to the widespread infiltration of bone marrow and the destruction of bone by the myeloma cells and also to the abnormal serum protein ("M" protein) they elaborate. About half of the patients succumb within 17 months after the onset of symptoms; however, one-fifth survive 3 years or more (1).

Many agents have been employed for the chemotherapy of multiple myeloma. Four warrant special mention: stilbamidine, urethan, prednisone and melphalan. Their value may be assessed in terms of the relief of bone pain they afford and reversal of the objective changes cited above (Table 1). The percentage of myeloma cells in marrow aspirates or biopsies may not be a reliable reflection of changes in the disease state or of the functional capacity of the marrow, due to the irregular, patch-like invasion of the marrow in certain phases of the disorder. Finally, the duration of survival of groups of patients treated with a given agent may be considered in judging the value of treatment.

Stilbamidine. In 1946 (2) interest was aroused in using this drug for the chemotherapy of multiple myeloma because of its success in the treat-

Urethan has been known as a protoplasmic and mitotic poison since 1910. It had been used in the treatment of chronic myelocytic leukemia. Its chemical structure (ethyl carbamate) bears no relationship to stilbamidine (Figure 1).

Urethan is given in doses of 2-4 grams daily, by mouth, over a period of 8 or 10 weeks, to a total of between 120 and 300 grams. It was reported to relieve bone pain and arrest progression of osteolytic lesions; recalcification occurred only rarely. In some cases a remarkable decrease in

ment of another disease characterized by hyperglobulinemia, i.e., kala azar. In addition, it was demonstrated, in vitro, that stilbamidine combined with the ribosenucleic acid abundant in the cytoplasm of myeloma cells, to form inclusion bodies. Inclusions were also noted in myeloma cells removed from patients after administration of the drug. There were many reports of the relief of bone pain in patients who received 15 or 20 daily, intravenous doses of 100 to 150 mg. of stilbamidine di-isethionate dissolved in 200 c. c. of distilled water. However, the healing of bone lesions, reduction of hyper-globulinemia and of Bence-Jones proteinuria and the relief of anemia were very rare occurrences. Unfortunately, the drug aggravated the renal insufficiency accompanying multiple myeloma, or that due to other causes, and there was delayed occurrence of trigeminal neuralgia. Even though the last two complications seemed to be avoided by using 2-hydroxystilbamidine, interest shifted from the diamidines to the orally administered agent, urethan.

<sup>\*</sup> Studies contributing to this report were supported in part by Public Health Research Grants CA-03400-06 from the National Cancer Institute and Veterans Administration Research Grant No. 8270.

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$$CH_3 - CH_2 - O - C - NH_2$$

### URETHAN

Figure 1. Structural formulas of stilbamidine and urethan (ethyl carbamate).

the number of myeloma cells in the marrow was noted and a rise in hemoglobin concentration to normal values occurred without transfusion (3). Reduction in Bence-Jones proteinuria and in the abnormal serum globulin was achieved in some cases. In the experience of others, benefits were limited to about one-fifth of the cases and improvement in serum proteins, proteinuria and bone marrow did not occur (4). In many of the patients treated with the drug, nausea and vomiting limited the amount which could be prescribed. Parenteral administration did not avoid that problem. In addition, marked leukopenia and thrombocytopenia sometimes occurred as side effects and necessitated discontinuing treatment. Severe liver necrosis was noted as an occasional complication in the experience of several treatment centers and at least four fatalities attributed to this toxic action have been reported (5).

Benefits of treatment, when achieved, were temporary in nature. There is no evidence that survival is extended by treatment.

Prednisone, given in doses of 30-50 mg/day, has been recommended for control of the hyper-

calcemic syndrome (hypercalcemia, nausea, vomiting, polyuria and dehydration) when it occurs in multiple myeloma (6). Of equal or greater importance in that emergency situation is the rehydration of the patient, by the parenteral route. Treatment with corticosteroids for periods of 4 months or more has resulted in reduction of bone pain in many cases. An increase in the hematocrit and a reduction in abnormal serum globulins occurred more often in prednisone treated cases than in comparable placebo treated controls (7). Survival was not enhanced. The risks of infection, peptic ulceration of and hemorrhage from the gastro-intestinal tract and accelerated osteoporosis are to be considered in prescribing this form of treatment for any length of time. Since prednisone and related compounds do not share the myelo-depressive toxicity of urethan, they may be used when pancytopenia due to the last named agent intercedes. In certain cases, the patient's euphoria consequent upon corticosteroid treatment may delude the patient and deceive the physician into the belief that more objective benefit is being derived than may actually be the case.

## MELPHALAN

$$CI - CH_2 - CH_2$$
 $NH_2$ 
 $-CH_2 - CH_2 - CH_2 - CH_2 - CH_2$ 
 $NH_2$ 
 $-CH_2 - CH_2 - CH_2 - CH_2 - CH_2 - CH_2 - CH_2$ 

3 P-[BIS (2-CHLOROETHYL)

Figure 2. Structural formula of melphalan (generic name). This compound had been known as L-sarcolysin in earlier publications.

# AMINO PHENYL L-ALANINE

Melphalan (Figure 2) is currently under investigation at a number of medical centers (8). It holds the promise of greater objective improvement in patients than that found with other agents. Melphalan is a chemical congener of nitrogen mustard (Figure 3), substituting the methyl group with an phenylalanine side chain. That modification allows the drug to be taken by the oral route and apparently confers on the compound a more favorable therapeutic ratio for treatment of multiple myeloma. Healing of osteolytic lesions (Figure 4) has been noted and reduction in abnormal serum globulin and of Bence-Jones proteinuria have occurred after re-

# MECHLORETHAMINE (NITROGEN MUSTARD)

Figure 3. Structural formula of mechlorethamine (generic name) the commonly employed nitrogen mustard.



Figure 4. Healing of osteolytic lesions in the skull of a 56 year old white male with multiple myeloma, treated with melphalan. During the period July 1962 (left) to July 1963 (right) most of the lesions recalcified. (See Figure 5.)

Pt. A.F. 56

WM - MULTIPLE MYELOMA

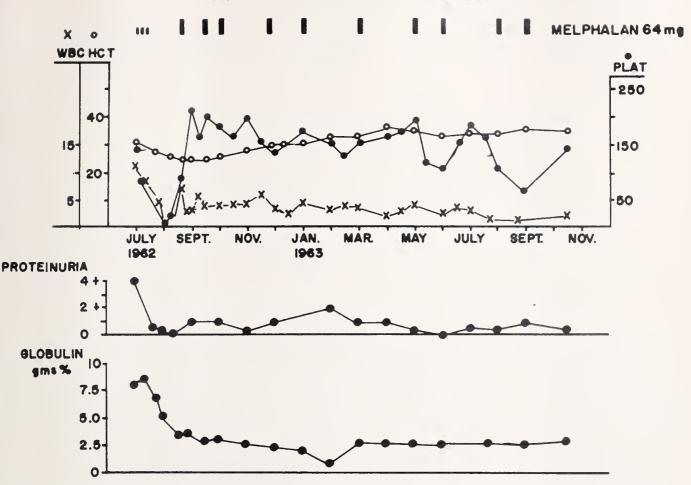


Figure 5. Clinical course of the patient (A.F.) whose x-rays were presented in the preceding figure. Each bar at the top of the drawing represents 64 mg of melphalan given by mouth over a period of four days. The reduction of Bence-Jones proteinuria and of hyperglobulinemia and the gradual increase in hemoglobin concentration over a 16 month period are illustrated. Leukopenia was probably a side effect of chemotherapy.

peated courses of treatment over many months (Figure 5). Anemia has been relieved without recourse to repeated transfusions (Figure 6) and patients have been sustained in relative well being for many months.

As in the case of all "new" agents, an initial flurry of favorable case reports generates enthusiasm, but greater experience is required to judge the true value of the drug in a series of unselected cases. Toward this end, patients are being treated in a cooperative chemotherapy program at the University of Arkansas Medical Center, the Little Rock Veterans Administration Hospital and elsewhere.

### TABLE 1

Clinical Sequelae of Multiple Myeloma

- I Due to Bone Lesions
  - A. Pain
  - B. Osteolytic Lesions
  - C. Hypercalcemic syndrome
  - D. Pathological fractures
  - E. Tumors attached to bone

- Il Consequent to Dysproteinemia ("M" protein)
  - A. Reduction in normal serum gamma globulin —liability to infection
  - B. Bence-Jones proteinuria
    - -renal insufficiency
  - C. Amyloidosis
- III Hematocytopenias
  - -associated with myeloma cell infiltration of bone marrow
  - A. Anemia
  - B. Thrombocytopenia
  - C. Leukopenia
  - D. Combinations of above

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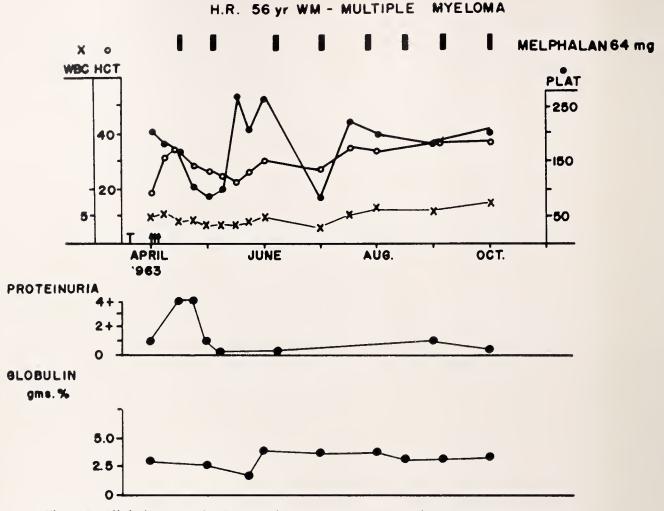


Figure 6. Clinical course of a 56 yr, old male (H.R.) with multiple myeloma, treated with melphalan as in the preceding case. The patient's initial hematocrit of 18ml/100ml was temporarily increased after transfusions (arrows) in April 1963, then fell again to 22ml/100ml six weeks later. In the next 41/2 months of treatment the hematocrit rose to 39 ml/100ml without further transfusion.

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## Comparative Value of Adrenalectomy and Hypophysectomy in the Treatment of Disseminate Mammary Carcinoma

J. P. Leis, Jr., W. M. P. McKinnon, and W. F. Bowers, J Int Coll Surg 40:136 (Aug) 1963

The authors discuss hormonal therapy for carcinoma of the breast in premenopausal, menopausal, and postmenopausal patients. The two

surgical procedures for the suppression of hormones, adrenalectomy and hypophysectomy, are compared as to their effectiveness in the management of disseminated carcinoma of the breast. The advantages and disadvantages of each are listed, with emphasis on the fact that much of the value of either will depend on the availability of a competent surgeon and the condition of the patient from the psychological standpoint.



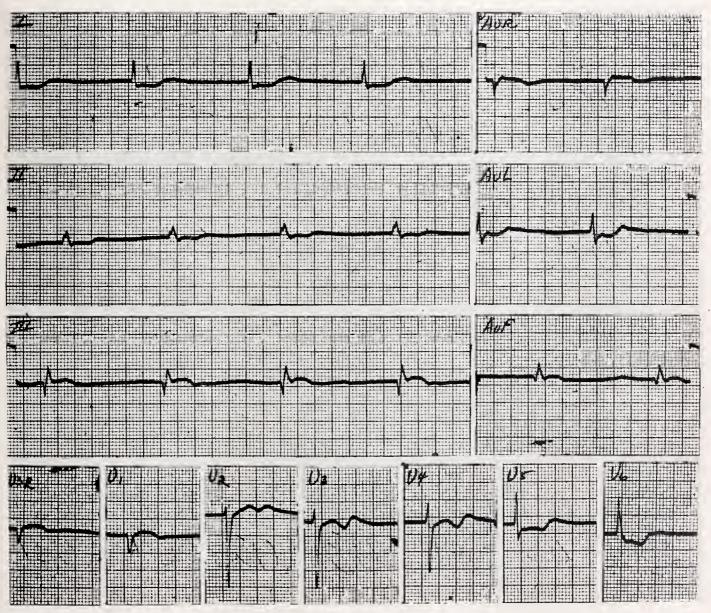
### WHAT IS YOUR INTERPRETATION?

AGE: 80 (?) SEX: F. BUILD: STOCKY BLOOD PRESSURE:120/80

MEDICATION: None

HISTORY: Long history of Dyspnea, recent chest pain.

### ANSWER ON PAGE 346



The Department of Medicine, University of Arkansas Medical Center \*James S. Taylor, M.D., Professor of Medicine

## WHAT IS YOUR DIAGNOSIS?

Prepared by the
Department of Radiology, University of Arkansas
School of Medicine, Little Rock

### **ANSWER ON PAGE 346**



No. 16-74-11

History:

This is a mentally retarded boy with a history of convulsions. Other members of the family are similarly affected.

16 year old white male



### PUBLIC HEALTH AT A GLANCE

## **PHENYLKETONURIA**

Rex C. Ramsay, M.D.

Director

Maternal and Child Health Division

O YOU HAVE A PATIENT with Phenylketonuria in your practice? If you do, the chances of this family having another child with Phenylketonuria are one out of four. The only method of diagnosing these cases is by a screening procedure, and in order to secure screening, you must think of this diagnosis. The child looks almost like any retarded child. Do you think that a child must have blond hair and blue eyes to have Phenylketonuria? If you do, then you should read this article. Do you wait until a child shows slow development before you think to test for Phenylketonuria? The child already has some mental retardation by the time a medical history shows slow development. In the past six months, two children have been diagnosed with Phenylketonuria in the State of Arkansas. These children were diagnosed at 18 months of age, after some mental retardation had already occurred. They were diagnosed by screening techniques, and not physical examination. How many more children do we have in our state that are slowly becoming retarded because of improper screening tests?

Case report: The child is a second born, full-term, white male. Delivery was normal. Pregnancy was complicated by a colon infection in the third trimester. The birth weight was 7 lb. 8 oz. The child was discharged from the hospital at four days and did well until five weeks of age when he had a URI with fever and vomiting. He continued to have intermittent coughing spells and vomiting until 3½ months of age. At this time his formula was changed; however, he continued to have the vomiting spells which resulted in his poor weight gain. An eczema of the face developed at four months of age and, even though treated with steroids, was very resistive to therapy. The baby had no obvious odor no-

ticed by the parents. The parents stated that the baby had dark brown hair at birth which gradually turned blond at 3 to 4 months of age. At 14 months of age, he could barely hold his head up for 15 to 20 seconds before it would fall back. He could not sit up or roll over. He began to have short spells described as rigidity of arms and legs with eyes slightly rotated upward. These spells would last for approximately one to one and a half minutes. The patient would completely relax following the spells and go on about his activity. He had only one to two spells a week. One male sibling in the family had no mental retardation. Phenylketonuria was diagnosed in this patient at 18 months of age. Physical exam revealed a generalized muscle hypotonia with hypotonic reflexes equal bilateral. The child was very sluggish in his response to stimulations. There was some irritability present. Lofenalac milk formula was used in conjunction with a low phenylalanine solid diet. Shortly after treatment was begun, the eczema disappeared and the child improved in his development. After being on the diet for four weeks no more seizures were recorded.

Mental retardation, I feel, is probably one of the greatest sources of human suffering. The child born with severe mental retardation is, not only a tragic human figure in himself, living yet not really alive, but he is the innocent agent of profound and endless suffering to his family and a perpetual burden to society. The causes of mental retardation are multiple, and in many cases, difficult to single out as to etiology; but, research has given us a way of prevention in the condition of Phenylketonuria, one of the inborn errors of metabolism which can be prevented. Much work has been done detecting the etiology of this condition as well as preparing a formula with restriction of phenylalanine which will prevent mental retardation in these cases. The big task now is to get support in preventing the condition in all children by screening procedures.

Genetics: Phenylketonuria is a condition determined by an autosomal recessive gene. This means that when two PKU carriers marry, one out of four of their children will have Phenylketonuria, one out of four will be completely normal, and two of the four will be carriers. There is a method of detecting carriers or the heterozygotes. This method is based upon giving the patient . I gram L-Phenylalanine per kilogram of body weight as a loading dose. The heterozygote will not be able to clear this drug from the bloodstream as fast as the normal control and they will not be able to metabolize the drug rapidly, thus causing their serum level to be higher than the normal control. This test is extremely helpful in genetic counseling, especially when a known carrier or a patient with Phenylketonuria is planning to enter into the state of matrimony. The fasting blood level of heterozygotes is slightly higher than the normal control, but this is not consistent enough to diagnose the carrier by one simple blood test. There are certain studies that indicate that the incidents of mental disorders other than Phenylketonuria are higher in the Phenylketonuria family. <sup>1</sup>Thompson found that severe mental disorders occurred in 13 relatives in six out of eight PKU families. This is compared to the control with three relatives of severe mental disorder in two out of eight control families. It is estimated by genetic studies that one out of every 70 of us are carriers.

Pathology: Not many cases have been examined by autopsy, but the ones examined showed several characteristics. The most common defect and most easily determined one is reduction in brain weight. Of course, this goes along with the mild microcephaly found clinically in many cases. The second most common abnormality is alternation of myelin in the brain tissue. Myelin changes range from occasional paleness to areas of marked diffuse involvement. Some of this involvement is limited to certain neurological tracts. The significance has been described as result of an enzymatic defect with subsequent failure of protein metabolism. It has been theorized that the myelin defect has been caused by a decreased tyrosine which is a necessary constituent of neurokeratin. It is difficult to establish the organic cause of brain deterioration when many of the Phenylketonuria patients with severe mental deterioration show no organic defect. The third most important finding is gliosis. Gliosis has been mentioned in about half of the published cases, but is usually mild, although sometimes diffuse as well as localized in a few regions of the brain. Its significance is not known. It involves microglia as well as occasionally oligodendroglia. <sup>2</sup>Scholtz's theory is that misdirected function of the glia cells will result in their hyperplasia. Unfortunately most cases show no pathological defect whatsoever so the correlation with any of these changes and functional intelligence is very poor.

Chemistry: There has been considerable debate on what is the cause of brain dysfunction in Phenylketonuria biochemically. We know that the primary defect is in the liver with an absence or deficiency of the phenylalanine hydrolyzate enzyme which causes the oxidation of phenylalanine to tyrosine. Animal studies show that the enzyme is not present in the fetus, but is developed shortly after birth in the normal infant. We know that damage to the brain occurs during the period of rapid growth and this is usually within the first four years. In a number of studies the largest phenylalanine level occurred between H days and H months. The phenylalanine level in untreated patients with Phenylketonuria did not vary much between the eleventh month period and the 54 year period. The breakdown products of Phenylketonuria are: I. Phenylalanine $-10^{\circ\prime}_{0}$ ; 2. Phenylpyruvic acid $-30^{\circ\prime}_{0}$ ; 3. Phenyllactic acid-20%; 4. Phenylacetyl Glutamine- $15_{0}^{o}$ ; 5. O-Hydroxyphenylacetic a c i d  $= 10_{0}^{o}$ . These metabolic products are found in the urine and much study has been done in attempting to find the toxic products that causes the brain deterioration. We do know that the phenylalanine in the urine as well as the blood appears to have no relationship with brain deterioration. Studies have been done to show that the phenylalanine in the blood does cross the placenta barrier-this has been demonstrated in untreated Phenylketonuria mothers having normal children with normal IQ's. Blood levels of phenylalanine are higher than the normal in these cases. However, there appears to be some mysterious protection of these infant's brains. The average blood level of phenylalanine in these infants was 25

milligrams per cent. This is compared to the normal of 1-3 milligrams per cent. Some of the untreated Phenylketonuria patients have a blood level of 40 to 60 milligrams per cent; so you begin to reason that may be the actual height of the phenylalanine in the blood is the cause of the mental deterioration. This concept has brought about the reasoning by some observers why we have so many more Phenylketomiria diagnoses at present compared to the past. We know that better diagnosis plays a big part in the increase of cases. However, another concept is that there is quite a bit of difference in the blood phenylalanine of a baby who is breast fed and has solid loods introduced at a late date as compared to the present-day baby who is formula fed with introduction of protein solid foods at a very early stage of life. There have been many studies related to the height of the blood phenylalanine as compared to mental deterioration and no correlation can be found, but this is certainly an interesting concept. <sup>3</sup>There is a study of a history of two siblings with untreated Phenylketonuria over four years of age with approximately the same blood level of phenylalanine—one child had an 1Q of 20 as compared to the other with an IQ of 100.

The only metabolite in the urine large enough to be readily detectable in the blood is phenylpyruvic acid and most observers feel that this is the toxic product. The earliest that this product has been picked up in the urine is six days and the latest 34 days; so you can see that this certainly varies more than the blood phenylalanine amount would indicate. The amount of phenylpyruvic acid or any of the major metabolites cannot be correlated with the amount of brain damage as evidenced by the 1Q.

There are minor metabolic compounds excreted such as the indole acids, five benzyl hydantoin and hippuric acid. None of these compounds have proved to be related to the dysfunction of the brain. High phenylalanine blood levels interferes with melanin metabolism. One autopsy case showed a decreased pigmentation in the substantia nigra of the brain. However, this has not been found in other pathological examinations of the brain tissue. <sup>4</sup>Weil-Malherbe demonstrated that Phenylketonurics have a marked lower level of both epinephrine and norepinephrine than the control patient. <sup>5</sup>Armistrong showed that the end products of both

epinephrine and norepinephrine excreted by Plienylketonuries was only 2/3 of that excreted by control patients. These same patients were studied further and it was found that the amount excreted by Phenylketonurics was increased to the normal range when the patients were treated with a phenylalanine low diet. There is an interference with serotonin metabolism. There is a reported interference with glucose metabolism with two cases of severe retarded children found to have glucosuria. At this time, it was thought that maybe this was the cause of the deterioration of the brain. However, later normal IQ Phenylketonuria patients were found with glucosuria. Tyrosine and tryptophan metabolism is disturbed by high phenylalanine levels. This interference with formation of proteins by amino acids occurs in many of the inborn errors of metabolism. This possibly could be caused by the interference of transport of amino acids in the tissue. The children with Phenylketonuria usually have normal growth and this is in contrast with other inborn errors of metabolism. There is a change in the percentage of amino acid nitrogen present. Normally phenylalanine makes up 307 of the total amino acid nitrogen, but in the Phenlyketonuria patient, it makes up 30% or more of the percentage of amino acid nitrogen. The metabolism of thyroxin has been studied in conjunction with high phenylalanine blood levels and the patients are found to have no disturbance in thyroxin metabolism.

Clinical: I would like to impress upon you that even though there are certain characteristics found in the child with Phenylketonuria, Irequently these patients appear as a so-called brain damaged or cerebral palsied child. They may be labeled this way and present much difficulty in diagnosis. The only real way to diagnose these children prior to any brain damage is by routine screening tests in all children.

### 1. Vomiting and Irritability

Something you don't usually see in the literature is that the child is usually irritable and vomiting in the early stage. The vomiting is of unknown cause and multiple formulas are tried without success. Immediately after birth, the child is usually normal; but within three weeks to three months he begins with the irritability and vomiting. Some observers have tried to link pyloric stenosis with Phenylketonuria. In one series of cases, three out

of the 36 cases had surgery for pyloric stemosis. You can see that this is statistically high as compared to an incidence of one out of 150 male infants and one out of 775 female infants with pyloric stemosis.

### 2. Eczema

Eczenia is another early sign and usually seen from one month to one year. These cases are very resistant to therapy. However, when the diagnosis is made and the low phenylalanine diet substituted for the normal diet, the eczema will usually disappear. Some cases have been given a phenylalanine loading dose after having been treated with a low phenylalanine diet for several months. It is noted that the eczema will appear within 24 hours after the loading dose is given.

### 3. Blond Hair and Blue Eyes

The next sign, I know most of you have heard in association with Phenylketonuria, I would like to try to change, because this is the cause of many 'dysdiagnoses'. Many physicians think that the child has to have blond hair and blue eyes to have Phenylketonuria. Phenylketonuria was first discovered by Dr. Fölling in Norway in 1934. Most of the cases of the early reports were Scandinavian origin, and they were reported as over 90 per cent with blond hair and blue eyes. It is only lately that more cases in other countries have been discovered, and the incidence of blond hair and blue eyes has gone down to approximately 25 to 40 per cent of cases. Recently 12 cases from the Middle East were studied, and not a single child in this group had blond hair and blue eyes. The interference in melanin metabolism is the cause of the blond hair, and frequently the children that do have this sign show darkening of their hair following treatment.

### 4. EEG and Convulsions

Eighty per cent of the children have abnormal electroencephalograms. Hypsa rhythmia is seen in the infant stage occasionally. Twenty-five per cent of the children have seizures. These are mostly grand mal type, although petit mal and flexion spasms do occur. In general, the more serious the mental deterioration, the more frequent the convulsions. Seizures usually appear before the second year of life and gradually increase in severity with increased age. This occa-

sionally disappears in the adult.

### 5. Musty Odor

The next sign is the musty odor and this is a characteristic not overlooked by a person looking for this sign. Description of the smell is difficult. However, one observer likens it to the smell of "old, sweaty tennis shoes" or rat cages in experimental laboratories. One father with asthma said he could not stay in the room with his child because the smell would elicit an onset of asthma. The odor disappears with a low phenylalanine diet.

# 6. Wide Space between Incisor Teeth I have found no percentage of occurrence described in the literature. The two new cases recently diagnosed in Arkansas both have this space between the two upper in-

# 7. Hyperirritability and Schizophrenia-like Symptoms

The older child shows hyperirritability and schizophrenia-like symptoms on occasion. Sometimes these symptoms can be improved by a low phenylalanine diet; and, it is certainly worth while to give it a trial. Children of age five and six have been treated with improvement of their IQ levels and most observers feel that the diet should be tried even in the most severely retarded children.

### 8. Mental Retardation

cisor teeth.

Retardation is the most important sign and this occurs in 99 per cent of patients. There is a great variation in the IQ level of the child at the age of detection, as well as a great variation in how much improvement the child will get with the low phenylalanine diet. It is estimated that 60% of the children of untreated PKU are custodial and 30% trainable.

Treatment: The treatment is a low phenylalanine diet and many of the drug companies will give you booklets describing the content of phenylalanine in solid foods. Our Nutritionists on the Maternal and Child Health staff have done a wonderful job helping with the patients in Arkansas. They will be more than glad to help you establish a good diet for any child diagnosed with Phenylketonuria. Some observers have taken the children off of the diet at 4 years of age with no mental deterioration occurring after this time. A word of caution is necessary if the child

is removed from the diet at 4 years of age-he should be followed closely with psychological examinations as well as electroencephalograms. If there is any sign of mental deterioration, or any positive findings on the electroencephalogram as compared to the EEG while on treatment, the diet should be reinstated. Some of the dangers of treatment occur at about the fourth to sixth day of the diet when a negative nitrogen balance can occur, the patient begins to metabolize his own body protein which is richest in phenylalanine and the urine tests show up positive again. These patients occasionally become listless, anorectic with nausea and some vomiting occurring. This has even been established to be the cause of hypoglycemia in some of the children-the children refusing to take the unpalatable diet. There is a history of one child having seizures, going into coma and dying with a spinal fluid sugar showing 8 milligrams per cent and a blood sugar level of 33 milligrams per cent. Autopsy revealed no other cause for the hypogly-

cemia. Anemia can occur in these patients primarily because of lack of iron in the diet. Iron as well as vitamins should be a supplement of any restricted diet lacking these essentials.

Screening Procedures: Certainly all babies must be screened by some type of procedure. Since it is estimated by <sup>6</sup>Hormuth that only 16 per cent of babies delivered in a hospital are seen at any Well Baby Clinic or physician's office for a checkup, we must increase our efforts to screen all babies at birth. The most effective screening methods are as follows:

## **Blood Screening**

The Guthrie Inhibition Assay Screening Test is an extremely good test. It is a relatively easy test using a culture plate prepared with a culture of a strain of Bacillus subtilis. Thenylalanine is added to the plate to inhibit the growth of the bacteria. A heel stick producing a drop of blood is obtained from the baby on the third or fourth day of life. This blood is placed on a filter paper



8 Phenylketonuria cases in Arkansas diagnosed

- 1 case

which is steam heated to coagulate the protein. A small punch is made of the paper and this is placed on a prepared culture plate. The phenylalanine content of the paper punch interferes with the inhibition of the thenylalanine and the bacteria grows around the positive disc. This procedure will detect a blood level of 6-8 milligrams per cent. Guthrie has shown in his recent reports up to August, 1963, that out of 238,161 babies examined at birth by the blood screening technique. 186 tests were positive with 22 cases confirmed as having the diagnosis of Phenylketonuria. The parents were asked on each baby discharged to send in a follow up urine test, of which 163,712 complied with this request and not a single urine showed a positive test that had not been picked up by the previous blood test. This is certainly the most complete way of screening children known to date.

Urine Screening

Other methods of screening the children that are unable to obtain the blood screening test are:

Urine diaper test: One to two drops of a 10% solution of Ferric Chloride is dropped on a wet diaper. A positive test will show up with an almost immediate dark blue-green to gray-green color which will occasionally gradually fade to a neutral color. Since, as previously described,

the phenylpyruvic acid occasionally does not show up until the 34th day, the baby should not be reported negative until a test at the six weeks period shows a negative result. Urine left standing for 24 or more hours may give a negative test according to the quantitative amount of phenylpyruvic acid present.

Phenistix Test on Urine: This test is essentially the same as the 10% Ferric Chloride diaper test with the exception that a prepared dip stick impregnated with a buffered ferric salt is used to test the urine. A chart is supplied with the bottle to show the amounts of phenylpyruvic acid present in the urine.

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## ANSWER-Electrocardiogram of the Month

RATE: 46 RHYTHM: Nodal

PR:-sec. QRS: .11 sec. QT: ? sec.

INTERPRETATION: Abnormal. Nodal rhythm. Acute Myocardial infarction, posterior, transmural.

COMMENT: This elderly patient had emphysema but the cardiac origin of her recent vague chest pain was evident in the tracing. Disturbances in A-V conduction or nodal rhythm may especially accompany posterior infarction due to ischemia or edema of the A-V node.

## ANSWER-What is Your Diagnosis

Diagnosis: Tuberous sclerosis

X-Ray Features: Several conglomerate areas of calcification are noted within the skull in the general area of the lateral and third ventricles.

In tuberous sclerosis hard, tumor-like nodules are scattered widely, especially along the ventricular margins. These nodules are prone to calcify and may then be identified on routine skull films, as in this case.



# YOUR AMA MEETING AT PORTLAND

Alfred Kahn, Jr., M.D.

The American Medical Association has just concluded a highly successful clinical meeting at Portland. Interest as usual centered around three main features: progress in the science of medicine, service to the public and the profession, and entertainment.

Surprisingly, the second feature is one of the most interesting facets of these meetings. The AMA, contrary to popular belief, is an amazingly Democratic organization, and it is rather difficult to imagine how such a diffuse, geographically far flung profession can operate as it does. Most physicians are well aware at the local level that the societies elect their officers and delegates; the only possible clique at this level are the members themselves, and the ruling group is invariably those with the best attendance. The thing that is ill-understood is that at the National level your delegates are not coerced or silenced but are encouraged to get up and discuss any and all problems. It works in this fashion. Matters of business are conducted during the interim between Meetings by officials, trustees, councils, and committees. The decisions are considered tentative and are brought up at the opening of the session in an open meeting before all of the elected delegates. The following day or days all of these matters are referred to an appropriate so-called Reference Committee. The Reference committees then have open hearings at which any AMA member may get up and oppose or support the tentative decision, tentative amendment, tentative report, business decision, etc. Your duly elected delegate can support or oppose matters of interest of his constituent physicians or a nondelegate member may speak. After the hearing the Reference Committee makes a recommendation, and the matter under discussion is referred back to the House of Delegates who may pass or turn down the proposal: only then is the decision final. How could this be more fair or democratic?

At this session there were no earth shaking decisions but this in itself makes it all the more remarkable how hard the many committees work throughout the year to condense and organize the material to be presented at these business sessions. These preparatory and business meetings represent many hours and many days of work by many busy people gratuitously foregoing practice or teaching to conduct the affairs of our profession. This work is not adequately recognized by the rank and file membership of the AMA.

No unusual scientific discoveries were aunounced at this session. Of particular interest to Arkansas physicians was the session devoted to the treatment of acute and chronic renal failure. A group of interesting chronic renal failure cases were presented; they were kept alive by periodic hemo-dialysis of the blood through the use of an artificial kidney. A permanent catheter is emplaced in an adjacent artery of vein of the lower arm. Once per week this is hooked up to an artificial kidney and the patient is hemodialyzed. These folks are able to live and work effectively despite no functioning or little functioning kidney tissue. This is highlighted to Arkansans because the University of Arkansas Medical School now has such a project underway. Also of great and continuing interest were reports on the use of peritoneal dialysis for not alone acute renal failure but also in certain chronic cases by means of repeated peritoneal puncture. There were outstanding review presentations of aldosterone. anemias, antibiotic therapy, and the relationship of genetics to medicine. The scientific exhibits

of this session were good; no outstanding new therapeutic achievements were demonstrated.

The semi-annual sessions stress some entertainment features, and unquestionably, the official banquet of the Portland session was a smash hit by any standards. The Gleemen, a large choral group of men and women from the Portland area gave an outstanding performance, and were followed by the Dixie Docs, a group of physicians who played Dixieland Music. The feature of the evening was a most eloquent talk by Oregon's

young governor, Mark Hatfield, who decried America's materialism, dependency, and hatreds. Entertainment at medical meetings has not as its sole purpose: fun. Its principal value is to afford an opportunity for physicians to meet each other, and thus have an easy, informal basis of the exchange of ideas about medicine, the profession, and above all better and newer techniques of care of the patient.

The Portland meeting was a most successful one in your behalf.



# Lactose Intolerance as Cause of Steatorrhea In an Adult

F. Kern, Jr., J. E. Struthers, Jr., and W. L. Attwood Gastroenterology 45:477 (Oct) 1963

Dietary balance studies in a 22-year-old woman showed that both milk and lactose feedings caused significant steatorrhea and a high fecal lactic acid. The patient was unable to absorb lactose administered either orally or intraduodenally even though D-xylose, glucose, other dietary disaccharides, and lactose administered with lactase were normally absorbed. There was no lactosuria. Milk constituents other than lactose did not cause steatorrhea or increased fecal lactic acid. Antibiotic treatment did not alter the lactose absorption, the lactose-induced steatorrhea, or fecal lactic acid content. The jejunal mucosa was histologically normal. An assay of jejunal mucosa for lactase activity showed a partial deficiency of intestinal lactose.

## Vestibulospinal Reflexes: V. Acute Disturbances of Vestibular Function After Operation on the Stapes, Especially as Evaluated by the Stepping Test

E. Peitersen, Arch Otolaryng 78:642 (Nov) 1963

In addition to the ordinary otological examination, 40 patients with otosclerosis were investigated nystagmus; they were also submitted to the stepping test before the operation and on the first, second, third, fourth, 14th, and 30th postoperative days. Twelve patients underwent stapediolysis and 28 underwent stapedectomy. Prior to the operation, five patients had complained of

dizziness; 28 complained on the first postoperative day, and two on the 30th. Preoperatively, no patient had spontaneous or positional nystagmus, whereas on the first postoperative day 18 had spontaneous and 12 had positional nystagmus. The direction of the nystagmus was toward the operated ear in 22 and away from it in 8. The postoperative stepping test showed significant preponderance of rotation toward the operated ear, most marked on the third and fourth days. The distribution of the degree of rotation was also significantly altered postoperatively.

## Management of the Difficult Septum

J. A. Gill, Arch Otolaryng 78:652 (Nov) 1963

There are many reasons for obstructed nasal breathing. When the deformed nasal septum is the cause, the immediate question seems to behow can this septum, which is tortuously deflected to points off the intended central location, be best shifted and made to fit into a normal midline position? The surgeon who attacks this problem is better prepared to handle it if he is informed on nasal physiology and has precise knowledge of the anatomy in this area. A theory regarding etiology is presented, which will aid in an analysis of the development of the septal deviation. Finally, a technique of surgery for the nasal septum is described. This technique, which can be incorporated with the rhinoplasty operation, has the advantage of gaining maximum exposure and stresses the shifting of mobilized cartilage for central positioning rather than removal and replacement.



St. Jude Hospital, Memphis, Tennessee, is initiating a research program in children's nutritional and metabolic problems.

Beginning January 6, 1964, a clinic for nutritional and metabolic disorders will be held each Monday morning at 9:00 A.M. and a number of in-patient beds will be available for children requiring hospitalization.

Infants and children under age 16 with the following disorders may be accepted ON REFER-RAL OF LICENSED PHYSICIANS:

- 1. Severe malnutrition
- 2. Lipid disorders (Gaucher's disease, Niemann-Pick's disease, lipemia)
- 3. Malabsorption syndromes
- 4. Diabetes mellitus

Since facilities are limited, physicians wishing to refer children should first contact Dr. Paulus Zee by telephone at Area Code 901, 525-8381 or by mail at this address: St. Jude Hospital, 332 N. Lauderdale, P.O. Box 318, Memphis, Tennessee, 38101.

There are no charges for medical or hospital care. Patients are accepted without regard to race, religion, or geographic origin.

## Education Course Held in Georgia

Thirteen case histories were presented at the continuing education course, "Thirteen Cardiacs", held January 14-16, 1964, at the Medical College of Georgia.

Participants and faculty sent 13 case histories complete with x-ray, ECG, and other data. A cardiologist, assigned to each case, defended his diagnosis and management against any dissenting opinion. "Answers" were then demonstrated in the form of autopsy material, physiological data, or medical and surgical therapeutic results. There were no formal lectures.

# New Clinic to Treat Children With Neurological Disorders

A new outpatient clinic to treat children with neurological disorders has been established at the University of Arkansas Medical Center. Dr. John Bornhofen, pediatric neurologist, will head the new service. The clinic will be held each Thursday for children with diseases of the nervous system causing specific learning problems, convulsive and developmental disorders, cerebral palsy and muscular dystrophy.



# AMA Congress on Environmental Health Problems

On May 1-2, 1964, a program sponsored by the Department of Environmental Health, Division of Environmental Medicine and Medical Services. American Medical Association will convene at the Chicago-Sheraton in Chicago.

The symposia subjects will be air pollution, water pollution, pesticides, and radiological health.

## Postgraduate Symposia on Ob-Gyn

Postgraduate symposia devoted to the operative aspects of gynecology and obstetrics will be presented March 12 and 13 at the University of Oklahoma Medical Center, Oklahoma City.

The program will consist of lectures, round table discussions and informal small group seminars. Registration information and a program may be obtained from the Office of Postgraduate Education, University of Oklahoma Medical Center, 801 NE 13, Oklahoma City 4, Oklahoma.

## 17th National Conference on Rural Health

THEME: Health in a Changing Rural Environment

The Conference will convene at 9:45 a.m., Friday, March 6, and conclude at noon on Saturday.

Registration opens at 8 a.m., Friday. There is no registration fee.

For further information, write, Council on Rural Health, American Medical Association, 535 North Dearborn Street, Chicago, Illinois, 60610.

## American Industrial Health Conference

The 1964 American Industrial Health Conference will be held April 13-16 at the Pittsburgh-Hilton Hotel in Pittsburgh, Pa., it has been announced by the INDUSTRIAL MEDICAL ASSOCIATION and the AMERICAN ASSOCIATION OF INDUSTRIAL NURSES.

The scientific program, in which many of the nation's experts in the field of occupational health will participate, will be augmented by both scientific and technical exhibits. Intensive courses in selected areas of medical practice and industrial hygiene also will be presented. Further information about the Conference may be obtained by writing: American Industrial Health Conference, 55 East Washington St., Chicago, Ill. 60602.

## Course in Laryngology and Bronchoesophagology March 16 through 28, 1964

The Department of Otolaryngology, University of Illinois College of Medicine, will conduct a

postgraduate course in Laryngology and Bronchoesophagology from March 16 through 28, 1964, under the direction of Paul H. Holinger, M. D.

Registration will be limited to fifteen physicians who will receive instruction by means of animal demonstrations and practice in bronchoscopy and esophagoscopy, diagnostic and surgical clinics, as well as didactic lectures.

Interested registrants will please write directly to the Department of Otolaryngology, University of Illinois College of Medicine, 1853 West Polk Street, Chicago 12, Illinois.

## **Program in Cardiology**

A nine month tutorial program in Cardiology, September 15, 1964 to June 15, 1965, will be offered by the Institute for Cardio Pulmonary Diseases, Scripps Clinic and Research Foundation, La Jolla, California. This will be an intensive program covering the field of cardiovascular diseases and is especially designed for the physician in private practice who wants a year of organized instruction with freedom from direct patient responsibility. For details, write: E. Grey Dimond, M.D., Institute for Cardio Pulmonary Diseases, Scripps Clinic and Research Foundation, La Jolla, California.



## PERSONAL AND NEWS ITEMS

## Posthumous Award to Dr. Richardson

The Distinguished Service Award of the Southern Medical Association was awarded post-humously to Dr. Fount Richardson at its meeting in New Orleans November 18-21. Dr. Richardson joined SMA in 1934 and was very active in the organization over the years. He served as secretary and as chairman of the Section on General Practice, as Councilor from Arkansas, Chairman of the Council, Chairman of the Executive Committee of the Council, member of several committees,

and had been elected president-elect of the Southern Medical Association shortly before his death in 1961.

## "Book of Golden Deeds" Award to Dr. Bost

Dr. Roger Bost, Fort Smith pediatrician and an active humanitarian project promoter, was the 1963 recipient of the Fort Smith Exchange Club's "Book of Golden Deeds". Dr. Bost attended the University of Arkansas and the University of Arkansas School of Medicine, served as naval

officer and took postgraduate training at Duke University Medical Center, where he received a special award as the outstanding first-year resident. He practiced his specialty as a member of the staff of Ochsner Clinic at New Orleans and served as an assistant professor at the Tulane School of Medicine before moving to Fort Smith. He was instrumental in the organization of the Sebastian County Association for Retarded Children. A place to train and educate retarded children was organized and was named the Roger B. Bost School in recognition of his work. Dr. Bost also helped in the formation and organization of the Child-Family Guidance Center in Fort Smith. He is a member of the Fort Smith Public School Board and works with the Sebastian County Mental Health Association. As chairman of the Polio Advisory Committee of the Arkansas Medical Society, Dr. Bost organized the statewide oral polio vaccine mass immunization program in 1962.

## **AMA Meeting**

A number of physicians from Arkansas attended the Clinical Meeting of the American Medical Association in Portland, Oregon, December I-4. Among those attending were: Dr. James M. Kolb, Sr., of Clarksville, delegate, and Mrs. Kolb; Dr. J. W. Kennedy of Arkadelphia, delegate, and Mrs. Kennedy; Dr. Alfred Kahn, Jr., of Little Rock, alternate delegate, and Mrs. Kahn; Dr. Ben N. Saltzman of Mountain Home; Dr. A. S. Koenig of Fort Smith; Dr. Morriss Henry of Fayetteville; and Dr. R. B. Robins of Caniden.

## Dr. Robins Speaks at Practical Nurses' Meeting

Dr. R. B. Robins of Camden was guest speaker at a meeting of the El Dorado Practical Nurses in November. He discussed "The Outlook for Mankind" and showed slides which he made on a world tour. Dr. Jacob Ellis of El Dorado served as master of ceremonies for the banquet meeting.

## Dr. Benafield Appointed Coroner

Dr. Robert B. Benafield has been appointed as Faulkner County Coroner to fill the unexpired term of Robert McNutt, who died in October. The term expires December 31, 1964. Dr. Benafield is a general practitioner and began practicing in Conway in July 1962. He is a graduate of the University of Arkansas School of Medicine.

## Dr. Green Joins Staff at Newport Hospital

Dr. Roger L. Green, a native of Missouri, joined the staff of the Newport Hospital and Clinic in November. He came to Newport from Memphis, where he was engaged in postgraduate work at Baptist Memorial Hospital. He was graduated from the University of Missouri School of Medicine in 1960, and served his internship at Baptist Memorial Hospital in Memphis.

## Dr. Hesson Opens New Clinic

Dr. John D. Hesson opened his new clinic building in Rison in November. Dr. Hesson began his practice in Rison in July 1961 after completing his internship at Chester County Hospital in West Chester, Pennsylvania. He was graduated from the University of Arkansas School of Medicine and has served two years with the United States Air Force.

## Dr. Miles Opens Office in Warren

Dr. Dallas D. Miles, a former Warren resident, has returned to open his office for the general practice of medicine and surgery. Dr. Miles is a native of Monticello and a graduate of the University of Arkansas and the University of Arkansas School of Medicine. He has practiced for the last eight years at Waller, Texas.

## Fort Smith Child-Family Guidance Center

Dr. Phillip Traff, clinical psychological Consultant at the University of Arkansas, will be at the Fort Smith Child-Family Guidance Center one day each month on a consulting basis. The Guidance Center Board also agreed to employ two psychological examiners from the University to come to the Center once a week.

#### Work Begun on Medical Clinic in Pine Bluff

A clinic which will be occupied by eight doctors is under construction across 42nd Avenue from Jefferson Hospital in Pine Bluff. The building will contain offices for the following doctors: E. L. Hutchison, J. R. Pierce, O. C. Raney, W. R. Meredith, A. G. Sullenberger, Calvin R. Simmons, James B. Rice, and V. Bryan Perry.

## City Hospital at DeWitt Holds Open House

DeWitt's new City Hospital held an open house on November 24th with people from every community in Arkansas County attending. Dr. R. H. Whitehead is chief of staff of the new hospital. Other members of the Medical staff are Dr. C. W. Rasco, Jr., Dr. John Hestir, Dr. Joe Cross, all of DeWitt, and Dr. Paul Millar of Stuttgart.

# Dr. Robins Delegate to World Medical Association

Dr. R. B. Robins, Camden, Arkansas was recently named at the Portland AMA meeting as an alternate U. S. delegate to attend the World Medical Association meeting June 13-19, 1964 in Helsinki, Finland. This will be the fourth year that Dr. Robins has been one of the four official U. S. representatives to this world medical conclave.

# General Practitioner Elected Chief of Staff at Memorial

Dr. Charles H. Kennedy of 4507 Lakeview Road, North Little Rock, was elected chief of the medical staff of Memorial Hospital Tuesday night. He replaces Dr. W. E. Phipps, Jr.

Dr. Kennedy is the third chief of staff to be selected since the hospital opened in 1961.

## **Doctor Appeals Judgment in Airport Slander Case**

Dr. Stephen D. McMillion of 1939 Arrowhead Road says he will appeal to the Arkansas Supreme Court a \$5,500 judgment against him in a slander suit filed by Lt. Col. George V. Armstrong, Jr.

Armstrong testified in Pulaski Circuit Court that he was accused falsely a few months ago of misusing his position of the North Little Rock Airport Commission to arrange for some improvements to his home.

## New Technician at Freeland Clinic

A new registered x-ray and laboratory technician has joined the Freeland Clinic staff at Star City, Dr. James W. Freeland has announced. She is Mrs. Bill Jentzsch of Houston, Texas, formerly of Malvern.

She began work at Freeland Clinic Monday, November 11.

## **County Medical Scholarship Board Meets**

The Union County Medical Association met in regular session Tuesday night, November 12, at the Library of Warner Brown Hospital. Dr. James O. Cooper, president, presided.

Dr. Cooper reviewed the purpose of the scholarship fund as one to serve as an aid in the education of medical students in this area. Dr. Cooper stated that students in need of aid in their medical education are invited to apply to the Scholarship Association for consideration.

## Dr. Injured in Traffic Accident

Dr. John T. Herron was injured in a traffic accident in Little Rock in October. Dr. Herron is State Health Officer.

#### Dr. Establishes New Office

Dr. William H. Wyckoff has established an office in Camden. Dr. Wyckoff was graduated from the University of Arkansas School of Medicine in 1949. He completed his ophthalmology residency in New Orleans and was in practice there before moving to Camden.

## Dr. Speaks at Kiwanis Club

Dr. Herbert Wren, Jr., of Texarkana, spoke on heart diseases at a meeting of the Texarkana Kiwanis Club in November. He outlined the activities of the American Heart Association pointing out the tremendous gains made in the treating of heart disease in the past ten years.



WHEREAS, the death of one of the most highly esteemed members of the Independence County Medical Society, and the Arkansas Medical Society, Dr. Lorenzo T. Evans, has caused his fellow physicians to be deeply sorrowed and,

WHEREAS, Dr. Evans, a former President of the Independence County Medical Society, and of the Arkansas Medical Society, has served the cause of organized medicine untiringly, as a counselor, as a medical member of the State Medical Draft Liaison Committee during World War II and as one of the most ethical, courageous, well read, and adaptable general physicians in this and other counties over fifty years, having served as President of the Arkansas Medical Society with great dignity in 1947-1948, and,

WHEREAS, Dr. Evans was responsible for many a young high school and college graduate entering the practice of medicine or it's ancillaries, and

WHEREAS, the Independence County Medical Society and the Arkansas Medical Society realizes that without Dr. Evans' devotion to Medical Society Affairs that the practice of medicine,

which we younger men now enjoy, was protected by him and others like him, before our time, and we owe him a great debt of gratitude for this.

WHEREAS, Dr. Evans was held in high regard by the citizens of Independence, Stone, Izard, Fulton, Baxter, Sharp, Randolph and White Counties, by his patients and by his associates and,

WHEREAS, he has served faithfully as a member of his community, and for many years as a tithing member of his Presbyterian Church,

BE IT THEREFORE RESOLVED, by the Independence County Medical Society, of which Dr. Evans was a member for over fifty years, that we are sorrowed by his departure.

That we express our deepest sympathy to his wife and to his many friends,

That a copy of this resolution be forwarded to his family,

That this resolution be made a part of the permanent records of the Independence County Medical Society, and

That we shall cause this resolution to be published in the Journal of the Arkansas Medical Society.

By Action of the Memorials Committee Independence County Medical Society J. Joel Monfort, M.D., Chairman Read and Approved: December 3, 1963.



## PROCEEDINGS OF SOCIETIES

#### **Ouachita**

The Ouachita County Medical Society met Tuesday night, December 10th, at 7 p.m. at the Camden Hotel with members of the dental profession as guests.

An address was given by Dr. Wm. O. Young, a psychiatrist of Little Rock, on "The Mental Health Situation in Arkansas".

New officers were elected as follows:

Delegate \_\_\_\_\_Dr. Perry J. Dalton of Camden Alternate \_\_\_\_\_Dr. Joe Ellis of Camden

#### **Craighead-Poinsett**

More than 40,000 persons in Craighead and Poinsett counties got their first dose of Sabin oral polio vaccine in November. The total for the two counties represents about 53% of the combined population. Dr. Charles Kemp and Dr. Don

Neblett, directors of the over-all program, were highly pleased with the success of the initial Sabin Oral Sunday and expressed hope that the number taking the vaccine would be greatly increased at the make-up clinic one week later.

## Crittenden

The Crittenden County Medical Society was scheduled to hold its annual meeting in November and was to decide whether or not Sabin oral vaccine will be offered in the county. Dr. Milton Lubin, president of the Society, said that interest in the availability of the vaccine had been expressed by many Crittenden county people since clinics for administering the vaccine are underway in neighboring counties.

## Pope-Yell

The Pope-Yell County Medical Society's president, Dr. Arnold Henry, issued a statement in connection with the annual fund drive of the Pope County Association for Retarded Children,

urging full support of the association through financial contributions and active interest.

#### Benton

The Benton County Medical Society met at the Elks Club in Rogers on November 14th and elected the following officers for 1964: President, Dr. Charles Stinnett of Siloam Springs; Vice President, Dr. Lawrence Pillstrom of Rogers; Secretary-Treasurer Dr. B. J. Puckett of Siloam Springs.

# American Medical Association: Report on Actions of the House of Delegates

Portland, Oregon, Dec. 4, 1963.—Tobacco and health, the rights and privileges of Negro physicians, revision of the AMA Constitution and Bylaws, voluntary health agencies and blood banks were among the major subjects acted upon by the House of Delegates at the American Medical Association's Seventeenth Clinical Meeting held December 1-4 in Portland, Oregon.

The AMA Layman's Citation for Distinguished Service was awarded for the sixth time, and for the first time at a Clinical Meeting, to Mr. M. Lowell Edwards of Santa Ana, Calif., and Brightwood, Oregon. Mr. Edwards, a 65-year-old retired engineer, has designed and built artificial heart valves now in use in more than 2,600 persons with diseased hearts.

The House at its opening session expressed deep shock at the tragic death of the late President John F. Kennedy and directed that a letter of heartfelt sympathy be sent to Mrs. Kennedy, her children and the late President's family. The House also pledged its support to President Lyndon B. Johnson in forging national unity in the weeks and months ahead and offered the Association's resources, counsel and cooperation on matters of health.

Dr. Edward R. Annis, AMA president, reporting on the recent House Ways and Means Committee hearings on the King-Anderson Bill, told the House:

"The combined testimony of the American Medical Association, the state societies and our allies made a far greater impact on the members of the committee, friend and foe alike, than at any other time in the history of this long and bitter conflict."

Dr. Annis also reported that under questioning from Committee Chairman Wilbur Mills, actuaries of the Department of Health, Education and Welfare admitted that the King-Anderson Bill would require a tax rate twice as high as they have previously claimed.

Final registration at the Portland meeting reached a total of 7,103, including 3,144 physicians.

## **Pulaski County**

The Pułaski County Medical Society cooperated with the American Diabetes Association's program for Diabetes Detection Week by distributing free testing kits. The Society president, Dr. Watson, expressed hope that the undetected cases in Little Rock could be discovered by such a program. Dr. Louis Tolbert served as chairman of the county society's detection program.

## **Delegate to World Medical Associating Meeting**

Dr. R. B. Robins of Camden was one of the United States delegates to the World Medical Associating meeting held in New York City in November. Dr. Robins a trustee, was one of the four AMA officers to serve as delegates to the meeting.

## Postgraduate Seminar

A postgraduate seminar sponsored by the Arkansas Academy of General Practice was held in Jonesboro in November with Dr. Morris Pasternack and Dr. Russell Patterson, both of Memphis, and Dr. Thomas E. Townsend of Pine Bluff as featured speakers.

## Columbia County

The November meeting of the Columbia County Medical Society at the Magnolia Inn featured a discussion of the treatment of fractures of the hand. Dr. Ernest R. Hartmann, orthopedic surgeon, from El Dorado was the speaker.

## **Drew County**

At a meeting of the Drew County Medical Society in November, Dr. K. R. Duzan of El Dorado spoke on the King-Anderson Bill now before Congress. The meeting was presided over by Dr. J. P. Price, president of the local medical society.

## **Hot Springs Rotary Club**

The Hot Springs Rotary Club was addressed in October by Dr. Martin Eisele of that city who spoke on lung cancer. Dr. Eisele is president of

the Arkansas Division of the American Cancer Society.

## Monticello Rotary Club

The program speaker for Rotary the week of November 10, was Dr. Winston K. Shorey, dean of the Arkansas Medical School and a Little Rock Rotarian. He was introduced by Dr. J. P. Price.

Dr. Shorey described the facilities of the Arkansas Medical School as "one of the finest in the country, but is out-growing its facilities in some areas. This school is primarily a teaching hospital." In his talk, he carried a mythical medical student through the four years at the school to obtain his MD degree, through internship and specialty training, and the different types of practice open.



## **BOOK REVIEWS**

W. B. SAUNDERS COMPANY features

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## TUBERCULOSIS



## ABSTRACTS

Sponsored by Arkansas Tuberculosis Association

## TRANSTRACHEAL ASPIRATION TO DETERMINE BACTERIAL FLORA OF LOWER RESPIRATORY TRACT

When the oropharynx is bypassed in the search for bacteria in the lower respiratory passages, mixed organisms are seldom recovered, suggesting that patients with symptoms of "chronic bronchitis" seldom harbor bacteria in these passages. Infection of the lower respiratory tract is receiving increasing attention as a possible cause of chronic bronchitis and emphysema. There is evidence that Haemophilus influenzae and pneumococci, organisms said to be the most frequent pathogens in chronic bronchitis, are commonly isolated from the mouth and pharynx of persons who have no respiratory ailment, and that oropharyngeal secretions mask the bacteriology of those expectorated from the lower respiratory passages.

Aspirates obtained at bronchoscopy by ordinary techniques are frequently contaminated with

DAVID V. PECORA, M.D., Ray Brook Tuberculosis Hospital, Ray Brook, N.Y.; The New England Journal of Medicine, September 26, 1963.

oropharyngeal organisms. To overcome this difficulty, refinements such as the use of a polyethylene tube to protect a retractable cotton swab have been employed at bronchoscopy, and transtracheal aspiration was developed in an attempt to bypass the oropharynx completely. CULTURES COMPARED

In the present study, a comparison was made of cultures obtained by bronchoscopic swabbing and by transtracheal aspiration in 44 unselected consecutive patients requiring bronchoscopy.

Of the 44 patients, all but two had roentgenographic evidence of pulmonary disease. Prior to examination 14 patients had received antibiotics that might have eliminated pre-existing infection of the lower respiratory tract.

Transtracheal aspiration was performed immediately before bronchoscopy. The trachea was punctured between the cartilaginous rings. A sixinch length of vinyl tubing, sterilized by autoclaving, was inserted into the trachea through the needle, which was withdrawn.

All cultures obtained by both methods were

incubated aerobically at 37 degrees centigrade on blood agar plates for approximately 48 hours. In 6 cases (3 by each method) 3 or fewer colonies of organisms were obtained. Since they appeared to be extraneous contaminants, these cultures were included with the negative tests.

The transtracheal method yielded the higher number of negative cultures and, in addition, fewer "single organism" positive cultures. Two patients yielded the same single organism (one a staphylococcus and the other a pneumococcus) by both methods. Only 4 cultures obtained by the transtracheal route yielded mixed organisms as compared with 11 by the other method.

## MIXED ORGANISMS RARE

Mixed organisms were recovered so infrequently by the transtracheal route that one suspects that when they are recovered the tip of the vinyl tube had been coughed out of the trachea into the pharynx. This theory is partially substantiated by the fact that cultures obtained later at pulmonary resection were negative in the one patient with noninfectious pulmonary tuberculosis whose transtracheal culture yielded mixed organisms. Furthermore, past experience indicates that patients with pulmonary tuberculosis and other chronic pulmonary affections almost invariably have sterile lower respiratory tracts at thoracotomy.

The one patient with chronic lung abscess yielded a nonhemolytic streptococcus by transtracheal aspiration on two occasions. The same organism was cultured from the lung when the lesion was excised later. Bronchoscopic culture yielded a mixture of organisms. One patient with bronchogenic carcinoma yielded negative cultures by the transtracheal method and from pulmonary tissue at the time of later thoracotomy. Bronchoscopic cultures were productive of a mixture of organisms.

## TRANSTRACHEAL METHOD SAFE

Transtracheal aspiration is a safe procedure. Approximately 400 have been performed at Ray Brook without a serious complication. Minor complications have consisted of mild subcutaneous emphysema, hematoma, and, in two cases, infection of the needle tract by tubercle bacilli. The latter occurred in patients who harbored viable organisms resistant to commonly employed drugs. Transtracheal aspiration can be performed by the physician in the patient's room

after a little training. False-positive cultures may be obtained if a long vinyl tube is used and the patient is permitted to expel the internal tip from the trachea into the pharynx. False negatives may be obtained if the specimen does not contain mucus.

The bronchoscopic technique has many disadvantages. The procedure must be performed by one expert in handling a bronchoscope. It is uncomfortable and cannot be prescribed lightly, especially on repeated occasions. Contamination by oropharyngeal secretions is not eliminated since the tip of the bronchoscope may carry them to the bronchial mucosa. Some agents used for topical anaesthesia are bactericidal, which may reduce the number of positive cultures. The opportunity of obtaining both false positives and false negatives appears to be greater by the bronchoscopic than by the transtracheal method.

## GOOD TECHNIQUE

Thus, the transtracheal method of culturing the lower respiratory tract would seem to be the best technique short of open thoracotomy.

Preliminary results of the transtracheal method, confirmed by cultures obtained at open thoracotomy, indicate that patients with chronic cough productive of purulent sputum, who have reddened bronchial mucosa, are heavy smokers, and who may have laboratory evidence of obstructive ventilatory disease, rarely harbor viable aerobic bacteria in the lower respiratory tract. When pyogenic organisms do invade the lower respiratory tract they appear to do so in pure culture and for relatively short periods.

Perhaps the rarity of such chronic infections can be attributed to the widespread use of antibiotics. If this is so, infections of the lower respiratory tract respond readily to small amounts of such drugs, for many of our patients who yield negative cultures by the transtracheal method have received short courses of treatment prior to admission. On the other hand, many patients with no demonstrable infection give no history of drug therapy. It appears more likely that the respiratory tract is able to sterilize itself rapidly. Since they are based upon evidence obtained by examination of expectorated sputum, many of the published data on the occurrence of infection of the lower respiratory tract are useless. There is much evidence that respiratory irritants such as cigarette smoke can cause, or at least intensify, "Chronic bronchitis."

J.C. MEDICAL CENTER LIBRARY MAR 30 1964

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March, 1964

# THE JOURNAL OF THE Arkansas MEDICAL SOCIETY

Vol. 60 No. 10

FORT SMITH, ARKANSAS

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Precautions: Toxic effects are infrequent: allergic phenomena such as polyarthropathy, fever, skin eruptions, and acute generalized morbilliform eruptions with or without fever. Rarely, dermatis goes on to exfoliation with hepatitis, and further dosage is contraindicated. Eruptions then usually subside. Though mild and rarely an indication for stopping dosage, gingival hypertrophy, hirsutism, and excessive motor activity are occasionally encountered, especially in children, adolescents, and young adults. During initial treatment, minor side effects may include gastric distress, nausea, weight loss, transient nervousness, sleeplessness, and a feeling of unsteadiness. All usually subside with continued use. Megaloblastic anemia, aplastic anemia, leukopenia, granulocytopenia and pancytopenia have been reported. Nystagmus may develop. Nystagmus in combination with diplopia and ataxia indicates dosage should be reduced. Periodic examination of the blood is advisable.

DILANTIN (diphenylhydantoin sodium) is supplied in several forms including Kapseals® containing 0.1 Gm. and 0.03 Gm. \*Roseman, E.: Neurology 11:912, 1961.







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## THE JOURNAL OF THE

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# Testimony of Joe Verser, M. D., Before House Ways and Means Committee



Dr. Joe Verser of Harrisburg, President of the Arkansas Medical Society, compares notes with Dr. William L. Wheeler, Jr., President of the New York State Medical Society, in the House Ways and Means Committee hearing room just prior to testifying against the King-Anderson Bill on January 21st.

Dr. Joe Verser, President of the Arkansas Medical Society, testified before the House Ways and Means Committee in Washington, D.C., on January 21st giving the Arkansas Medical Society's reasons for opposition to the current social security health measure known as the King-Anderson Bill. Dr. Verser was introduced by his Congressman, Mr. E. C. Gathings, and by the Chairman of the Committee, Arkansas Congressman Wilbur Mills.

Dr. Verser was thanked by the Chairman for giving the committee the views of the Arkansas Medical Society. Mr. Mills complimented Dr. Verser on the content and wording of his statement.

Dr. Verser's testimony follows:

I am Dr. Joe Verser of Harrisburg, Arkansas, President of the Arkansas Medical Society, whom I represent here today. The doctors of

Arkansas appreciate the Committee's consideration of our views with regard to health care of the aged through social security. I have been engaged in the general practice of medicine since 1936. I have held various offices in my county and state medical societies and have for several years been secretary of the State Medical Board, a branch of the State Government, which issues licenses and disciplines physicians. As a small town physician, it has always seemed desirable to me to participate actively in community affairs. In addition to these activities. I own and operate a farm and am chief of staff of the only hospital in our community. These activities, in addition to my medical practice, bring me in close contact with people of all ages and financial status.

The Arkansas Medical Society is comprised of 1,260 individual physicians scattered throughout the counties of the State. There are approximately 1,500 licensed doctors in the State so our organization represents 84% of the MD's in Arkansas. The Society was organized in 1875 and since that time has been the leading in Iluence in the improvement of the health record of the citizens of Arkansas. The medical school, established in 1876, was a result of Medical Society efforts and it has been supported since that time and expanded to its present high degree of recognition through the unremitting work of the Society. The sponsorship of the Cancer Commission, State Tuberculosis Sanatorium, and innumerable other projects demonstrate the interest of the members of the Arkansas Medical Society in the health and well being of the people of the State.

We believe that there is a problem of health care for some of the people over 65 in Arkansas. However, we believe that in Arkansas, as in other states, the problem has been grossly exaggerated and that, even though we are known as one of the poor states in the Nation, that portion

of our citizens who are over 65 and are medically indigent is relatively small. This is not to say that those people who are indigent, sick, and old do not have a problem of the very greatest magnitude. We, as an organization, and I, as an individual, sincerely believe that the money and mechanics are available in Arkansas for taking care of these people who cannot take care of themselves. If we did not believe this were so, we would be trying to develop some new system whereby these people could be given the best medical care available. This is demonstrated by the history of the medical profession and is a characteristic of Arkansans.

Since the enactment of the Kerr-Mills Law, the Executive Committee of the Arkansas Medical Society, of which I am a member, has worked closely with the Arkansas State Welfare Department to promote acceptance of the Kerr-Mills Program by physicians and the public. We believe that in the two years since the program's implementation in our State that we have achieved considerable success in these efforts. In the first year of operation of the Program, the Welfare Department reports that hospital patients increased from 8 in the first month to 322 per month by October 1962. The number of clinic visits increased from 19 in the first month to 499 per month by October 1962. Nursing home care increased from 2 patients in the first month to 172 in the last month quoted. Physicians' visits increased from 0 to 920 per month for October 1962. That is a rate of over 11,000 visits per year. The amount paid for hospitalization for October 1961 was \$920.24 against \$75,-840.58 for hospitalization alone in October 1962. This figure, of course, does not include payment for physicians' visits, clinic visits, dental visits, remedial eye service, transportation, or over \$19,-000.00 paid for nursing home care in the month of October 1962. Welfare Department records indicate that in April 1963, \$136,935.18 was paid for medical care of 2,174 cases. Since the program started, a total amount has been paid for medical services in the MAA category of \$1,359,-688.36. Of this amount for the month of April, hospitalization accounted for \$90,031.83 for 427 patients. During this same month, \$319,385.20 was paid out for patients in the Old Age Assistance category. This category benefits from provisions of the Kerr-Mills Law and is a big factor in caring for the indigent aged. Total hospitalization for all categories paid in April 1963 was in the amount of \$526,980.86. Each month since inception, the MAA program has shown a decided increase in all medical services for all categories.

The Arkansas Welfare Department and the Arkansas Medical Society are constantly working together to anticipate the needs of the indigent and to improve the program to serve these people to the best advantage of the whole population. Arkansas is a State of approximately 1,700,000 people. Of these, it is estimated there are 195,000 past 65 years of age. Approximately 29% of those past 65 are receiving welfare assistance and are, therefore, eligible for Old Age Assistance Medical Care. It has been estimated by the Welfare Department that there is a potential of from 60,000 to 67,000 eligible for the Medical Assistance for the Aged (Kerr-Mills) group in Arkansas. The Welfare Department further estimates that approximately 20% of this number may apply for service under the Kerr-Mills plan. This is evidence that many of the people who fall into this "potential" of 60,000 are covered by private insurance (nationally, over 50% of over-65 are), they know that their children will help them in case of illness, they have sufficient private means and faith in their doctor to meet such emergencies, or they are covered by the other government programs mentioned above.

From time to time changes have been made in the various services in an effort to increase benefits. For example, effective August 1, 1962, hospitalization in the MAA category was increased from 15 to 30 days per patient for the fiscal year. Also, at that time, the maximum days for the fiscal year for all categories with a diagnosis of cancer, first, second, or third degree burns, was increased to 60 days per patient. At the same time, the plan for extended hospitalization was begun which provided for hospitalization at \$5.00 per day when the patient had used the maximum days available for the fiscal year.

During the Fall of 1962 and the beginning of 1963, the Executive Committee of the Arkansas Medical Society held a series of meetings with officials of the State Welfare Department to consider liberalizing the eligibility requirements for the Kerr-Mills Program. At that time a couple, if both over 65, was limited to an annual income of \$2,400 to be eligible for MAA assistance. An individual was limited to \$1,200—

\$1,500 if he had an ineligible spouse or dependent children. He could own a home or equity in a home not to exceed \$7,500 in value. He could own real and personal property up to \$2,500 and have cash available of \$300 with an additional \$300 for his dependents. After consultation with the Welfare Department the Medical Society submitted suggestions for liberalizing these requirements. Afternate amounts were submitted in each category to enable the Welfare Department to make adjustments as their statistics indicated might be necessary in view of budget limitations. The maximum amounts recommended were:

Couple – both over 65 – annual income of not more than \$3,000

Single person—annual income of not more than \$1,650

Married and/or with dependents, \$1,800 Value of the equity in home — not to exceed \$12,000

Value of other property, excluding the home, not to exceed \$3,500

Cash reserve for single person, \$500

Cash reserve for a person having dependents, \$800 The immediate results of the recommendations by the Medical Society and a survey of its experience by the Welfare Department resulted in liberalizations effective July 1, 1963 as follows:

- 1. The amount of income a single person may have was raised from \$1,200.00 to \$1,500.00
- 2. The amount of income a married person or one with dependent children may have was raised from \$1,500.00 to \$2,000.00
- 3. Cash reserve for a single person \$500
- 4. Cash reserve for a person having dependents, \$600
- 5. The Department will pay the difference between the income of a MAA recipient in a nursing home and the cost of nursing home care up to \$175.00 a month. However, in no case will the Department's payment to the nursing home exceed \$105.00 per month.

It is anticipated that the program will evolve as experience in this field grows.

One of our greatest problems in connection with the Kerr-Mills Law in Arkansas has been to obtain adequate publicity on the availability of Kerr-Mills services. Practically nothing has appeared in the various news media as a result of government efforts. The dearth of publicity on

the program prompted the Medical Society to undertake to publicize its availability in the State. Through the cooperation of various television stations, a film discussing Kerr-Mills was shown, news releases were sent out to all daily and weekly newspapers in the State and through the Arkansas Farm Bureau an article is scheduled to be published in the Farm Bureau Press in a forthcoming issue. The Kerr-Mills Program has also been discussed over radio and television programs. We feel sure that while these efforts have helped Arkansas people to learn of the availability of medical care for the aged through Kerr-Mills, that a great deal more could be accomplished had the various government agencies concerned given this program publicity comparable to other government-sponsored legislation.

A great many of our citizens over 65 are not indigent in any sense of the word and do not wish to receive their medical care through any government program. It is becoming increasingly popular with this group of people to carry health and accident insurance to take care of such unforeseen bills. Blue Cross-Blue Shield of Arkansas has been among the growing number of insurance companies issuing health policies to those over 65. As of June 1, 1963, Arkansas Blue Cross-Blue Shield, through its various over-65 policies, sold health coverage to 25,331 subscribers. For the year of 1962, \$2,137,138 was paid out in benefits for the over-65 Arkansas citizens. The number of people covered by over-65 Blue Cross-Blue Shield will increase in proportion to the number of citizens reaching that age because Blue Cross-Blue Shield does not terminate its insurance to a subscriber when he reaches 65.

A great number of people are covered by health and accident insurance companies on which we do not have statistics. The Continental Assurance Company repeatedly carries full-page newspaper ads advertising their very adequate insurance for the aged population. The many other reliable companies in this field also carry insurance on the aged group, covering the health needs of these people on a contractual basis. In view of the Blue Cross-Blue Shield and commercial insurance plans in existence in addition to the Welfare and Kerr-Mills coverage, we believe there is no segment of our over-65 population which cannot obtain adequate medical care. Further, we believe that with the passage of time the people are beginning to understand that medical care is available regardless of their financial status.

In a poll taken by Congressman Gathings of my district and reported in the Arkansas Gazette on May 24, 1963, "85% (of those responding) opposed compulsory medical care for the aged under social security". Of course, there will always be isolated instances of individuals who will report tragedies due to inability to meet alleged medical bills. Upon investigation these almost invariably turn out to be misleading stories.

In conclusion, Gentlemen, the Arkansas Medical Society recognizes that some people in all age brackets, including those over 65, do have problems of the most serious kind when an illness or accident strikes them or a member of their families. All of the information and statistics at our command indicate to us, however, that those for whom adequate provision has not been made by laws already in existence constitute a very small percentage of our population. We are convinced

that to burden the whole working population of this country with an additional tax and more regulations for the purpose of providing for this very small segment of our population is unnecessary and unjust.

Social security medical care is comparable to war-time rationing and price controls—the price of cars was certainly held down but the trick was to get one at any price. The doctors would be so swamped with minor and imagined ailments that many persons who really needed attention would have to go without. Do we want our medical care on this basis? I do not think so. Let us learn from the experience of others, let us acknowledge that there is a small percentage of the population which does need help with their health problems and let us help them—leaving the rest their self-reliance, their self-respect and, most of all, their status as individual patients with a personal relationship with their doctor.



## Elastic Membranes of the Developing Human Aorta

H. H. Frankel et al, Arch Path 76:474 (Nov) 1963

A histochemical and morphological study of the development of the human aorta from embryo to early adulthood was made. In a 15 mm crownrump (CR) of a 6.5-week-old human embryo, fine thread-like aldehyde fuchsin positive intertwining fibers were discernible in the aorta. An incompletely formed internal elastic lamina was observed in a 25 mm CR (7-week) embryo. At this stage the membrane was composed entirely of alcian blue positive fibers. However, with increasing age, the elastic membranes were composed of a pink periodic acid-Schiff (PAS) positive core surrounded by an alcian blue positive sheath. Various histochemical reactions indicated that the first elastin formed may consist chiefly of an acid mucopolysaccharide substance. With development of the membrane, the acidic groups of acid mucopolysaccharide substances may combine with basic amino acids of proteins to form

neutral mucopolysaccharide-protein complexes (PAS positive core).

## Lateral Osteotomy in Rhinoplasty

W. K. Wright, Arch Otolaryng 78:680 (Nov) 1963 An anatomical study of lateral osteotomy techniques was made on cadavers and recorded on motion picture film; clinical studies were also made. After hump removal, the Becker method without medial osteotomy produced the best narrowing and closing of the open dorsum. Where large humps are removed, or where the nasal bones are very convex, lateral osteotomy may produce narrowing of the nasal airway. This can be prevented by producing vertical fractures from the lateral osteotomy to the dorsum, and then packing the nose carefully so that the convexity of the nasal bones is straightened. It is possible to use this method to repair already narrowed airways. Finally, a technique was described to reduce postoperative swelling and ecchymosis after rhinoplasty by employing hollow polyethylene drains along the lateral osteotomy.

# DEPRESSIONS . . . THEIR MANAGEMENT AND TREATMENT

Russell G. Walling, M.D.\*

#### Introduction

Depression is one of the most common of all human illnesses. It is encountered almost every day in medical practice . . . and to the psychiatrist in private practice it is represented in 50 percent or more of his practice. Depression may be an illness in itself, it may be presented with organic illnesses, or it may be the result of an organic illness. Frequently . . . you will see depression following surgery where there has been loss of body organs or following such an illness as hepatitis and practically all illnesses that are chronic in nature.

One of the major considerations of depression is that every depressed patient is a potential suicide. In 1962 over 25,000 persons in the United States were listed as suicides and there were more than 100,000 attempts . . . these are official figures . . . the actual number is believed to be much higher.

There are several types of depression . . . we usually try to break them down into two major types . . . the reactive depression and the psychotic or endogenous depression.

In REACTIVE DEPRESSION . . . there is clear-cut cause. It is usually transient in nature and in practically all cases is handled well by the family physician. It is generally the result of the loss of a loved one or a loved object and usually requires little more than support, a mild tranquilizer and sedative. Grief, following the death of a loved one, is an example of a reactive depression. Most cases . . . in time . . . will recover spontaneously.

It is primarily the PSYCHOTIC DEPRES-SIONS that I would like to discuss with you this afternoon. If depression is considered in your differential diagnosis, it is very easy to detect . . . and you can probably rule it in or out with about ten (10) questions. The depressive syndrome frequently includes the following symptoms . . .

I. Insomnia. Ordinarily the patient is able to go to sleep but awakens and cannot return to sleep.

- 2. Patient notoriously feels worse in the morning and feels a little better as the day progresses.
- 3. There is generally loss of appetite. However . . . a small minority may have an increased appetite.
- 4. There is loss of interest and drive. The patient no longer enjoys those things that he has enjoyed in the past.
- 5. There is a decrease in sexual drive . . . and the male patient may actually be impotent.
- 6. Many times there are guilt feelings and a tendency to be self-accusing.
- 7. The patient may have death wishes or suicidal ideas.
- 8. Quite often the patient has crying spells or he may feel he would like to cry but may be unable to cry.
- 9. Many patients have a sense of indefinite dread or sense of impending disaster.
- 10. When you look at the patient . . . he appears objectively depressed. The brow may be furrowed, he is stooped and looks toward the floor, there is a general retardation of movement, there may be evidence that his physiology is slowed down, and he may complain of constipation or register almost any somatic complaint.

## **Premorbid Personality**

The personality of the individual most likely to become depressed is that of a very quiet, kindly, and sympathetic person. They are nice people . . . and many times they are meticulous and perfectionistic. They are conscientious and feel their responsibility keenly. They are fearful of disapproval and usually are unable to verbalize their anger. They keep feelings inside and many times they are subject to exploitation. These people make excellent employees. It is believed that the leading factor in depression is the suppressing and repressing of hostile feelings.

## Management

When depression is suspected or diagnosed . . . the foremost question in the physician's mind should be . . . "is this patient suicidal?" The physician should try to ascertain this information by asking either direct or indirect questions

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about the patient's intentions. The patient may be asked his feelings toward life and you should not hesitate to ask him if he has suicidal thoughts. A standard question for me in handling the depressed patient is "have you ever been so depressed or despondent . . . at any time . . . that you have thought of taking your own life?" You should not worry about this upsetting the patient . . . if he has the idea, you are not putting it into his head; if he does not have the idea already, your question will not influence him to consider suicide. In many cases the patient will answer you without hesitation. If he blocks or becomes upset . . . then, you know that he does have these suicidal ideas.

In evaluating the potential suicidal patient ... you should take into consideration family history of suicide, previous suicide attempts and their nature. For instance . . . superficial cuts of the wrists or a mild overdose of medication is generally considered not serious. On the other hand . . . attempts at cutting the throat, the use of guns, or attempts at hanging are considered serious suicidal attempts and there should be consideration of immediate hospitalization in these instances. If a note has been written preceding a suicide attempt . . . the contents of the note should be evaluated to determine the seriousness of the intent or whether the attempt was merely an "attention-getting" mechanism. If the examining physician is fairly secure in his belief that the patient's suicide attempts are not serious . . . then, an effort to manage the patient with medication and observation is indicated.

#### **Treatment**

Chemotherapy consisting of a combination of a tranquilizer and an energizer (Monamine Oxidase Inhibitor) such as tranylcypromine (Parnate) and trifluoperazine (Stelazine) is quite effective. This should be used along with a sedative such as amobarbital sodium (Sodium Amytal). Many times it is advantageous to give one of the long-acting amphtamine preparations each morning until the tranylcypromine (Parnate) has a chance to build up. In my experience . . . a minimum of 10 days to 3 weeks is necessary before adequate response can be expected. The patient should be followed very closely for undesirable side reactions such as postural hypotension. There are a number of MOA inhibitors that are quite effective as antidepressants. Under no circumstances should any MOA inhibitor be used if imipramine (Tofranil) or amitriptyline (Elavil) have been used previously. The combination of these two drugs has caused severe toxic reactions. Imipramine (Tofranil) and amitriptyline (Elavil) are also effective antidepressants and probably are less prone to cause side reactions than the MOA inhibitors. Generally speaking . . . it is my impression that the response to these medications are not as rapid . . . however, there have been numerous cases reported in literature testifying to their effectiveness. There appears to be some hidden factor in prescribing medication of any kind . . . one physician seems to obtain better results than another and it may be due to his own confidence and enthusiasm in prescribing. If the patient is not making adequate progress . . . after 6 weeks of medication . . . then, electric convulsive therapy should be considered. Many times electric convulsive therapy should be considered prior to this extended trial on medication . . . especially if the individual's depression is completely disabling. Electric convulsive therapy is 80 to 90 percent effective in treatment of depressions.

Many psychotic depressions can be managed by the General Practitioner. Probably the most important factor . . . other than the proper medication . . . is close observation and frequent visits. Another helpful factor is encouraging the patient to externalize his feelings. If we adhere to the theory that many depressions are brought on by repressed and suppressed hostility . . . then, sublimation by sports and recreation that involve physical violence such as golf, tennis, hunting, fishing, etc. should be effective. These activities can be helpful to the patient and help confirm the theory of repressed and suppressed hostility. Generally speaking . . . anything the patient does that detracts from himself will be helpful. Along with chemotherapy . . . some time should be set aside for evaluating the patient's progress and to allow him to verbalize and desensitize some of his feelings.

## Summary

Many of the psychotic depressions may be handled by the General Practitioner with the aid of MOA inhibitors and thymoleptic agents such as imiperine hydrochloride (Tofranil) and an antidepressant such as amitriplylline hydrochloride (Elavil) along with tranquilizers and sedatives . . . but, the patient must be observed closely and

frequently and there should be at least a week to 10 days between the use of MOA inhibitors and the other two antidepressants (Elavil and Tofranil) because of the toxic reactions that can occur when these drugs are used in conjunction with each other. Diversion and activities involving physical violence are helpful.



# New Iodine Compound for Degerming the Skin Surface

C. L. Geraci, Arch Surg 87:560 (Oct) 1963

The background for the development of socalled "iodosphores" is discussed; this particular study involves a new iodophore, Surgidine. Skin cultures were obtained before and after skin preparation and after the end of the operation on 50 patients prepared with Surgidine, and on 50 patients prepared with hexachlorophene soap and benzalkonium chloride. The study was done in a large general hospital and involved operations of all types and patients of all ages. After skin preparation, 40 cultures were negative for Staphylococcus in patients prepared with Surgidine, whereas among patients prepared with hexachlorophene soap there were 25 negative cultures. Staphylococcus cultures were reduced to 25% of their preparation levels after using hexachlorophene soap. There was no instance of skin sensitivity to the iodine.

## Effect of Whole-Body Hypothermia in Ammonia Intoxication

G. D. Zuidema et al, Arch Surg 87:578 (Oct) 1963

Hypothermia has been proposed as a useful adjunct to surgery in patients with cirrhosis. It appears to reduce enzymatic activity and bacterial metabolism without interfering with the liver's ability to detoxify ammonia. The effectiveness of hypothermia was studied in Eck-fistula monkeys. Ammonia intoxication was produced by giving human blood (40 ml/kg) by gastric tube. The animals were lightly anesthetized, with endotracheal tubes, on respirators. Ammonia determinations were made hourly for eight hours and reached peak levels at four hours. Normothermic animals had a mean value of 342

 $\mu$ g % at four hours; hypothermic animals averaged 153  $\mu$ g % at that time. The possible clinical application of these findings was discussed.

## Corticosteroids and Intraocular Pressure

B. Becker and D. W. Mills, Arch Ophthal 70:500 (Oct) 1963

Corticosteroid (betamethasone) drops were administered four times daily, for up to two months, to one eye of patients classified into three categories: 1. Forty-four glaucomatous patients-those with established glaucoma under good pressure control. 2. Thirty-two glaucoma suspects-those with a Po/C value of more than 100 after drinking a liter of water, but with no other evidence of glaucoma. 3. Thirty volunteers—normal to a battery of present methods of testing for glaucoma. The glaucoma and the glaucoma-suspect groups demonstrated large and highly significant increases in intraocular pressure and striking decreases in facility of outflow in the steroid-treated eyes without significant changes in their opposite control eyes. In the volunteer group, a surprising number of steroid-treated eyes (30%) developed elevations of intraocular pressure to 21 mm Hg or higher. The pressure elevations in the steroid-treated eyes were significant and associated with significant decreases in the coefficients of aqueous outflow facility. These changes, more frequent in those over the age of 40 years, were totally reversible when the corticosteroid drops were discontinued. It was emphasized that the frequent occurrence of elevations of intraocular pressure after the use of topical corticosteroids for an extended period demanded careful ophthalmologic follow-up, especially in proved or suspected glaucoma.

# **HEALTH AND PULASKI COUNTY\***

Robert Watson, M.D.\*\*

As you know, my term as President of your Society is completed with this meeting. If we may, I would like to take a few minutes of your time to review some of our Society activities for the past year. The subjects that we might dwell upon are so numerous that only a few can be mentioned now, and certainly none of them can be discussed in the detail that they justly deserve.

Each day, all of us feel so burdened with our daily responsibilities of medical care for others, that few of us ever stop to realize what a massive part we, as doctors, play in serving a very important position in one of the most necessary activities in Pulaski County. We seldom take time to realize what an important position medical care and health services represent in the overall economy of Pulaski County. Medical care in Pułaski County represents one of the major economic activities; or, if I may use the word, "Industries," in Pułaski County. Certainly, few of us, and even a lesser number of other people in our community, likely appreciate this fact. The continuing improvement in health care for our population goes hand in hand with the continued industrial improvement and development of Pułaski County. As our services to the county and the state have increased in number, so has the number of doctors providing these services increased.

Advances in the past 10 years should be of interest to you. Ten years ago, our Society membership in all classifications included 304 names. Now, ten years later, our membership totals 402; roughly, a 331/3 per cent increase. Many new names have been added in the past 10 years, some have been dropped through transfer of residency, and a startling number of names have been taken from our rolls by death. Forty-four members of our Society have died during the past 10 years. Many of these men had filled a full and productive span of life, others died at far too young an age; but each, during his lifetime, served our community well and faithfully.

Particularly, I would like to call to your attention the growth that has taken place in hospital bed facilities here in Pulaski County in the last

10 years. Intentionally, I have limited these studies to hospital beds in private institutions. Veterans hospitals and state hospital services and facilities are not included. Ten years ago, the total bed capacity in hospitals treating private patients was 908 beds; now they total 1,700 beds, almost 100 per cent increase, practically double the number available 10 years ago. Most of all, though, you should be impressed to learn of the payroll of these hospitals providing private or hospital-sponsored charity services in this community. The payroll of these hospitals in Pulaski County represents a major industry in itself, and certainly, very few people realize that. The payroll alone for these hospitals, not the overall expenditures, but simply the payroll alone for this year, will amount to nine million, 137 thousand dollars, broken down as shown below:

HOSPITAL	BEDS 1953	BEDS 1963	ADM18- SIONS 1953	ADMIS- SIONS 1963	EST1- MATED PAYROLL 1963
Baptist	300	536*	15,191	18,000	2,803,114
St. Vincent	212	340	13,000	16,000	2,200,000
University	196	323	5,558	9,432	2,250,000
Memorial	None	118	None	4,000	459,000
Rebsamen	None	31	None	2,319	205,000
Mo. Pacific	125	275	3,996	6,800	900,000
Children's	75	75	1,064	1,175	319,564
Totals	908	1,698	38,809	57,726	\$9,136,678
* Ry January I	1064				

The largest single industry in Pulaski County has a payroll of between 6 and 6½ million dollars, nearly ⅓ less than the combined hospital payrolls, and has fewer employees than the hospital employees. This is an established contribution to our economy that already exists, and is, for the most part, unrecognized and unappreciated. It is our responsibility to show all others what an important part that we, as physicians, play and contribute in bettering, not only the health, but the economy of Pulaski County. We should each be proud of our position in our industrial community.

I feel this has been a productive year for the Pulaski County Medical Society. We have completed many important projects planned prior to 1963, and have maintained numerous other services that have been established over the years. Probably the greatest single activity in Society history, the Sabin oral polio vaccine, was successfully conducted in the early months of the year —390—thousand doses of Sabin oral poliomyelitis

<sup>\*</sup>Speech delivered to Pulaski County Medical Society by out-going president, December 3, 1963.
\*\*Donagliey Building, Little Rock, Ark.

vaccine were administered through the help and direction of the Society and, to the best of my knowledge, not a single case of poliomyelitis was reported in Pulaski County during 1963. This is an accomplishment for which we should all feel most gratified. Every individual member of the Polio Committee, and every member of this Society, is deserving of their share of full credit for this accomplishment. Many doctors faithfully gave their services for medical examinations for the North Little Rock Boys' Club, the Boy Scouts' summer camp, the Little Rock Public School examinations, and the Little Rock-North Little Rock Police Copper Bowl players. A total of over 3,000 examinations was represented in these services.

Through the Speaker's Bureau, television interviews to better acquaint the public with medical services offered them, have been carried out on a weekly basis. Likewise, our Public Relations Committee has provided innumerable speakers for various civic and school groups. Our exhibit at the Arkansas Livestock Show was visited by thousands. Our Diabetes Detection Week was again sponsored by the Society, and it is estimated that more than 4,000 persons took advantage of this free service.

Innumerable other services have been provided by our members, including Community Health Week, entertainment of visiting Mexican medical students, participation in the science fair at the schools, a close working relationship with the Chamber of Commerce, and in many other like activities, too numerous to mention, but each of value comparable to those that have been named.

We must not, however, feel complacent in our past accomplishments; but, instead, look to the future aims of our Society. We must look forward to the expansion of existing public relations projects and the inauguration of new projects as the opportunity arises. We must continue our efforts to encourage medical and medically related careers among young high school and college age students. We must provide a program of orientation for new physicians establishing practices in this community, and we must expand our services to members of the Society when the need arises. We must continue to conduct ourselves in all of our activities with the professional dignity demanded of one in our prolession.

In closing, I want to again thank each individual member of our Society for their generous and unselfish efforts in bettering our Medical Society, and our community at large. I want to thank the officers who have served with me this past year, thank each Committee Chairman and his individual committee members, and every single member of our Society, for their help, Ioyalty and support throughout the past year.

Again, I want to thank all of you, and hope that those who follow me will, in time, have the same feeling of appreciation to our Society that you have given me.

Thank you.



## Current Status of Dermabrasion: A Reappraisal

J. W. Burks, Arch Otolaryng 78:698 (Nov) 1963

An appraisal of dermabrasion, based upon experiences published by other dermatologists, and the author's own experience with more than 3,500 dermabrasions during the past 15 years, indicate that the procedure is highly successful in the

treatment of a wide variety of skin conditions, is the method of choice for the correction of certain skin defects such as acne scars and precancerous skin, and is a required adjunctive procedure for the practice of cosmetic surgery. Some of the most common conditions favored for the procedure are discussed, with particular attention to the role of dermabrasion in otorhinologic plastic surgery.



# TRAFFIC SAFETY

Louise M. Henry, M.D.\*

Many factors are involved in the study of traffic safety. Thousands of articles have been written on the subject many by experts such as illuminating engineers, statisticians, psychologists and others. Two safety factors everybody can understand are the use of safety belts and the slogan, "no drinking while driving."

Physicians know the trauma that happens to occupants of motor vehicles involved in a collision. The chances of escaping serious injury are 35% better if passengers are contained within the vehicle and belted to their seats, are the findings of the Cornell Research Center.

"It you don't have seat belts, get them; if you do have them, use them," is the current, well chosen slogan of the National Safety Council.

Motor vehicle fatalities in 1962 were 41,100, which is 2,500 more than in 1961.

"Today, we find automobiles out stripping even microbes and viruses as the most serious killing agents in modern society," said Dr. William J. Curran, at the National Conference on Trauma of the Automobile.

What provisions do we have in Arkansas for identifying the intoxicated driver?

Several cities are using a breathing device which indicates the degree or absence of alcohol in the breath of the driver involved in a traffic accident.

"Do you consider the implied consent law which operates in several states an infringement of one's rights?" This question was directed to Police Chief, Bill Knox of Fort Smith.

"I do not," he replied. "A person who drives while under the influence of alcohol, narcotics or any drug which seriously impairs his driving ability is taking risks with the lives of others."

"This nation was created around the policy that one man's liberty may extend to where the next man's nose begins" . . . according to Dr. Arthur H. Kenny, "The old dictum may be paraphrased that one man's liberty may extend to where the next man's fender begins."

Let's be sure that our seat belts are fastened, and that our driver is sober.

<sup>\*</sup>First National Bank Bldg., Fort Smith, Ark.

#### TEACHING SEMINAR

University of Arkansas Medical Center Little Rock, Arkansas



# 'Menouria" — A Complication of Cesarean Section\*

Case Report and Discussion

Byron L. Hawks, M.D.\*\*

James E. Hebert, Lt. CDR, MC USN\*\*\*

F. Youssefl first suggested the term "menouria" for vesical menstruation following cesarean section. The syndrome is characterized by an absence of normal menstruation and the substitution of cyclic hematuria. Examination of such a patient demonstrates a completely patent cervix with no evidence of vesico-vaginal fistula. The patient is not disturbed by urinary incontinence. Urological study quickly demonstrates a vesico-cervical-uterine fistula by means of direct cystoscopic observation and dye injection. The diagnosis should be made by history alone.

In addition to Youssef,1 several other clinicians have reported on this interesting post cesarean section complication. Six other cases have been analyzed and discussed by Laffont and Ezes,2 Ingelman-Sundberg,3 Musset and Mazingarbe,4 Stening,5 and Falk and Tancer.6 These last, in an excellent paper, reviewed the existing literature. All reported cases have shown the same features, i.e., the absence of significant urinary incontinence, apparent amenorrhea, patent cervical canal, and cyclical hematuria or menouria. In addition, all have been preceded by lower segment cesarean sections with the exception of

The following case report is the eighth demonstrating the syndrome of menouria.

## Case Report

M.E.J., a 35-year-old Caucasian, gravida 3, para 2, was admitted for an elective third cesarean section and tubal ligation. The first cesarean section was performed for "prolonged labor" and was complicated by a "postoperative peritonitis." The prenatal course with this pregnancy had been uncomplicated. Labor began on the night of admission calling for an emergency low transverse cervical cesarean section and tubal ligation which was technically uncomplicated. The bladder flap was purposely not dropped low because of the intended and planned sterilizing procedure. Immediately postoperatively, gross hematuria was noted which was of such volume that the urethral catheter became plugged. Twentyfour hours of this bleeding led to a cystoscopic examination which demonstrated an organized clot on the posterior bladder wall above the intraureteric ridge. The clot was left undisturbed and the bladder irrigated. No further hematuria was noted. The impression, at this time, was one of bladder contusion or suture misplacement. The patient then went on to intestinal obstruction, dehiscence of the operative wound, and reoperation. A volvulus of the cecum was found and corrected. Adhesions from previous surgery

Ingelman-Sundberg's case, which followed a vaginal hystereotomy.

<sup>\*</sup>Presented at the Arkansas Section—American College of Obstetricians and Gynecologists, Arkansas Obstetrical and Gynecological Society, September 20, 1962, University of Arkansas Medical Center, Little Rock, Arkansas.

<sup>\*\*</sup>Associate Professor of Obstetrics and Gynecology, University of Arkansas Medical Center, Little Rock, Arkansas, \*\*\*Senior Resident, Department of Obstetrics and Gynecology, U.S. Naval Hospital, Great Lakes, Illinois.

and peritonitis accounted for the volvulus. At the time of this second laparotomy, the bladder area was examined carefully and was found to be grossly normal in appearance. There was no evidence of urinary extravasation or hematoma. Thereafter, the patient's postoperative course was smooth.

Six weeks postoperatively, the patient appeared perfectly well and had no complaints. All pelvic and vaginal findings were within normal limits.

Twelve weeks after section, an episode of painless gross hematuria occurred which lasted three days and ceased abruptly. Pelvic examination was again normal and a careful search for a fistula was negative. The possibility of a uterovesical fistula was entertained but not proved at cystoscopy. The Urologist reported what he thought to be a "diverticulum of the bladder" and biopsied the tissue from the friable edge of the defect! The tissue was reported as endometrial in character! The diagnosis of bladder endometriosis was made. Fulgurations were attempted and during this period the patient again experienced a three day session of painless hematuria-this occurring along with persistent amenorrhea. She was followed with constant bladder drainage but the cyclic hematuria recurred and the amenorrheic state continued.

On January 30, 1961, six months post cesarean section, the patient was again admitted to the hospital for further study and possible laparoto-



FIGURE 1
Probe indicates location of uterine defect *above* internal os.

my. Studies on this admission demonstrated extravasation of contrast media into spaces adjacent to the bladder—presumably the uterus. Accordingly, the patient was operated on and a panhysterectomy performed with repair of a bladder fistula.

Grossly, the pelvic contents appeared normal on opening the abdomen. Upon dropping the bladder, dense fibrous adhesions were met between the bladder and the lower limits of the uterine corpus. Dissection was not too difficult and the uterus was removed easily. A fistulous tract was readily demonstrated between the bladder and uterus entering the latter organ *above* the internal os. (Fig. 1) The bladder defect was closed transversely with a double layer of chromic zero suture and the organ drained through a suprapubic cystotomy wound. The patient had an uneventful postoperative course and is well to date.

#### Discussion

During the past 20 years the lower segment cesarean section has almost completely replaced the classical section. This possibly explains why the first case of menouria was not reported until 1947. Youssef states that the rarity of the lesion can be explained by the infrequent use of the uterine incision high in the lower uterine segment and the fact that the bladder receives little trauma from the small amount of downward dissection required in this area; and it is true, as in this case report, that these fistulas are present in that portion of the uterus above the level of the internal os.

The exact physiological mechanism producing menouria is not known. Laffont and Ezes believed a valve mechanism existed. Falk and Tancer could demonstrate no such mechanism. Youssef states that the syndrome may be explained by the presence of a functioning sphincter at the uterine isthmus which prevents the passage of blood and urine through the patent cervical canal. He postulated that, in normal menstruation, the blood distends the uterine cavity causing relaxation of this sphincter with rhythmic discharge of the menstrual flow. When a utero-vesical fistula is present, the menstrual flow passes into the bladder, the uterine cavity is not distended, and the sphincter remains closed. Youssef asked for confirmation of his theory at the operating table by investigators dealing with future cases. Unfortunately, the pathology uncovered in this case was too engrossing to test this most plausible theory.

The management of this problem is primarily surgical using the trans-abdominal approach. Upon establishment of the diagnosis, definitive surgery should be delayed for several months to allow for the firm development of the fistulous tract, all necrotic tissue to slough, and the pelvic tissues to undergo complete involution. Prior to surgery, a complete urological evaluation should be performed to determine the exact relationship of the fistula to the trigone and ureters. The bladder and the upper urinary tract must be in a healthy condition.<sup>6</sup>

If, at operation, the fistula is small and the uterus appears to be in good condition and the patient desires more children, the uterine defect may be closed vertically after the usual woundedge "freshening." The bladder must be totally mobilized. The bladder defect is corrected by a transverse closure in two layers usually interrupted chromic 0 gut is used.

However, in the majority of cases, hysterectomy will be necessary either because of the size of the defect or due to the degenerative changes in the uterus secondary to urine extravasation or, as in our case, an abandoned uterus may be present due to a previous sterilizing procedure. After hysterectomy, the bladder is repaired in the manner described above. The repaired bladder requires continuous postoperative drainage either by an indwelling Foley catheter or through a suprapubic cystotomy wound.

Menouria must be differentiated from endometriosis of the bladder and vicarious vesical menstruation.

It is comforting to note that patients with menouria are not particularly disturbed by this aberration from the normal and lead comfortable lives. In fact, several have refused surgical correction or delayed it until other pelvic pathology developed demanding attention. The patient involved in this case report demonstrated this strange thinking quite well when she said "This is a much easier and cleaner way to have a period." Possibly she is correct.

#### Summary

- 1. A discussion of the syndrome of menouria and its relationship to cesarean section.
- 2. A case report.

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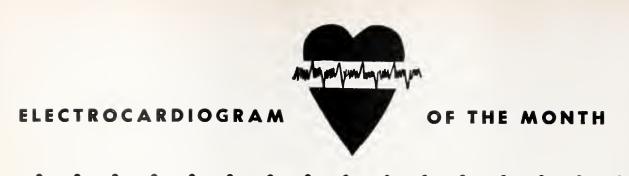
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#### Fractures of the Middle Facial Skeleton

C. C. Woodburn, Jr., Arch Otolaryng 78:687 (Nov) 1963

Various fractures and fracture combinations of the middle facial skeleton are classified. Methods of management proved effective in restoring the functions of the face are presented, with emphasis on the management of complex fracture patterns. The principle of immobilization by internal skeletal fixation is discussed in detail. Two photographs illustrate the involved techniques.



## WHAT IS YOUR INTERPRETATION?

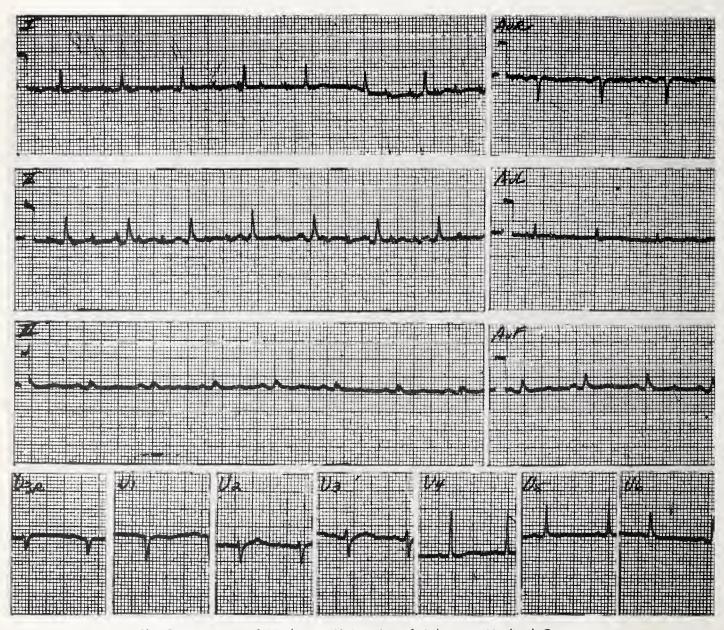
AGE: 38 SEX: F BUILD: STOCKY BLOOD PRESSURE: 140/96

MEDICATION: None

HISTORY: Progressive development of choreiform movements for past 9

months.

## **ANSWER ON PAGE 403**



The Department of Medicine, University of Arkansas Medical Center
\*James S. Taylor, M.D., Professor of Medicine

## WHAT IS YOUR DIAGNOSIS?

Prepared by the

Department of Radiology, University of Arkansas

School of Medicine, Little Rock

## ANSWER ON PAGE 403



No. 20-25-25

HISTORY: The patient had an early carcinoma of the cervix. On pelvic examination an eight centimeter right pelvic mass was found which seemed unrelated to the cervical cancer.



## PUBLIC HEALTH AT A GLANCE

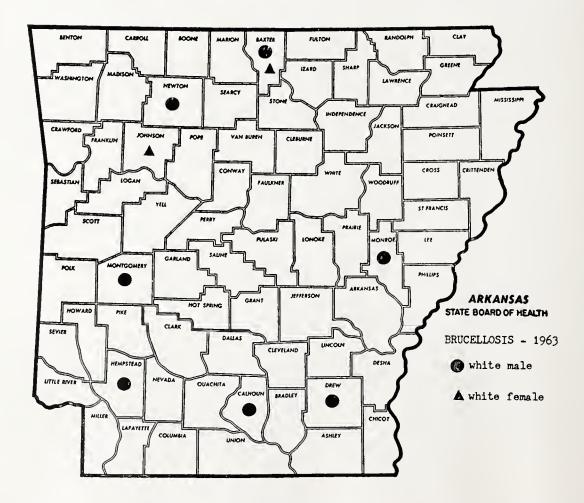
# **BRUCELLOSIS**

Brucellosis or undulant fever is notorious for its variability of severity. It is a systemic infection with either an acute or insidious onset. Fever may be continually, intermittent or irregular and of a variable duration associated with chills or chilliness. There may be profuse sweating, weakness, headache, arthralgia, or generalized aching. Symptoms may persist for several days, many months, or occasionally for several years. Fatality is two percent or less. Complete recovery is usually encountered but disability may be pronounced. Clinical diagnosis frequently is difficult and uncertain.

Brucellosis is world-wide. Males are affected more often than females because of occupational hazards associated with the reservoir of infection which exists in cattle, swine, sheep, goats, and horses. Infection may be acquired from the tissues, vaginal discharges, urine, and milk of infected animals. The most obviously contaminated tissue being placentas and aborted fetuses.

Although the laboratory diagnosis by isolation of the infectious agent is preferable, it is not always possible to secure adequate specimens at the right time. Therefore, agglutination tests showing a rising titer are a valuable addition.

Obviously, there will be great under-reporting of this condition. Not only because of failure to be reported, but also because of diagnostic difficulties and even more because of the tremendous mass of asymptomatic or inapparent cases. The recognized cases typify the iceberg phenomenon of a smaller portion being observable, but the presence of the larger unnoticed portion should



always be considered.

Arkansas had nine cases of brucellosis reported in 1963; seven, or roughly seventy-eight percent, were males. The youngest male being 27 years and the youngest female being 9 years of age. Five, or fifty-five percent, drank raw milk. Two had been exposed to abortion among cattle. One each had contact with cattle and hogs with no history of abortions or infections in their animals.

Prevention depends largely on education of

farmers and workers who handle carcasses to recognize the nature of brucellosis and its dangers. It is imperative that a search for infection among livestock be continued with elimination of infected animals from herds by segregation or slaughter. Pasteurization of milk and dairy products or boiling of milk when pasteurization is not possible is our best safeguard against epidemics of brucellosis.



## Myocardial Norepinephrine Concentration in Man: Effects of Reserpine and of Congestive Heart Failure

C. A. Chidsey, E. Braunwald, A. G. Morrow, and D. T. Mason, New Eng J Med 269:653 (Sept 26) 1963

In order to determine whether the oral administration of reserpine, in doses commonly employed clinically, affects the myocardial norepinephrine concentration, an atrial appendage was excised at the time of an open heart operation in 51 patients. Myocardial norepinephrine concentrations were measured spectrofluorometrically. Twenty-nine patients with various cardiac lesions who had not suffered from congestive heart failure served as controls. Five similar patients were treated with daily doses of 0.125 mg to 1.0 mg of reserpine receiving an average of 21 mg over a 50 day period. In the control patients the myocardial norepinephrine averaged  $1.82 \pm 0.77$  µg/gm, while in the patients who received reserpine the norepinephrine concentration was reduced to between 0.04 and 0.36  $\mu g/gm$ ; no overlap was observed between the two groups of patients.

# "Typical" and "Atypical" Serum Insulin-Like Activity in Untreated Diabetes Mellitus

N. Samaan and R. Fraser, Lancet 2:311 (Aug 17)

By assays using both the rat epididymal fat pad and an antiserum to insulin, the levels in serum of both "typical" and "atypical" insulinlike activity during an oral glucose-tolerance test were measured in 19 untreated London diabetics (5 juvenile, 5 middleaged thin, and 9 middleaged obese), and contrasted with those of ten normal subjects. All the groups of diabetics showed subnormal levels of "typical" insulin-like activity in serum during the glucose tolerance test. The juvenile and thin middleaged diabetic showed, respectively, very low and subnormal levels of "atypical" while in the middleaged obese diabetics showed high levels of "typical" insulinlike activity while in the middleaged obese diabetics these levels were high.



# **GOUT AND PSEUDO-GOUT**

Alfred Kahn, Jr., M.D.

Sorenson has recently reviewed the pathogenesis of gout in an excellent article (Archives of Internal Medicine, April, 1962). He states that if the blood uric acid is high for a long period of time symptoms of gout will appear. This could be due to excessive urate production or to poor urate excretion. The miscibleuric acid pool of the body is said to be 1,200 milligrams with a daily normal turnover of 600 milligrams.

Sorenson divides gout into primary and secondary types. Primary gout may be due to overproduction of uric acid or faulty urinary excretion. Secondary gout falls into the same general subhead but there is a third group: drugs which block renal tubular excretion. The author cites studies in patients using radioactive carbon; these patients overproduced uric acid and had miscible pools of uric acid as high as 2,907 milligrams per cent; the daily urate output was high; studies of the tophi indicated only part of the tophaceous uric acid was exchangeable. In primary renal gout there appeared to be a "dysfunction in the enzymatic transport mechanism of urate through the renal tubules"; there is a normal size of production of urate; the defect hereof could be increased absorption in the tubules or decreased tubular excretion; whereas in primary metabolic gout tagged glycine is incorporated into uric acid in increased amounts, in primary renal gout it is incorporated in normal amounts.

In the secondary gout, Sorenson describes studies on a patient with secondary metabolic gout, which is due to an increased formation or destruction of cells; polycythemia vera is an example of this category; the author's case had a miscible pool of 3,806 milligrams with a daily formation 1,667 milligrams, of which 78% was excreted renally. Secondary renal gout is due to an inadequate amount of renal tissue as in glomerular insufficiency seen in uremia, etc. A

few drugs block the excretion of uric acid, as chlorothiazide, if given at a certain dosage level.

Of particular interest in the recent literature is "The Pseudogout Syndrome" described by McCarty, Kohn, and Faires (Annals of Internal Medicine, May, 1962). These authors were studying urate crystals in the synovial fluid of gouty patients and discovered in cases which simulated gout a normal blood uric acid level and, most interesting of all, crystals in the synovial fluid which were not urate. Studies indicate the crystals were pyrophosphates and they were found principally in phagocytes. These crystals, if injected into the joints of man or animals, produced a typical synovitis like gout. The patients in this series were elderly and predominantly Negro. There was a 5 to 2 male to female ratio. The gout may be acute or chronic and seemed to be precipitated by trauma or diuretics. X-rays usually revealed abnormal calcifications. The authors feel that this disease and "chondrocalcinosis" are the same disease.

For the serious rheumatologist there is an excellent review of rheumatism and arthritis published as a supplement to the May issue of Annals of Internal Medicine. The problem of gout is extensively discussed (pages 50-68). Treatment of gout is divided into the acute, intercritical, and chronic phases. The acute phase treatment is colchisine, although trimethyl colchisine and other colchisine analogues are being tried with variable success; phenylbutazone was considered effective as was steroid therapy. In the intercritical period, colchisine was advised as a prophylactic and uricosuric drugs were thought to be of value. In the chronic phase uricosuric drugs were the treatment of choice. They included Probenecid and Sulfinpyrazone; also used were salicylates and Phenylbutazone. Diet does not seem to play an important role.

# PROGRAM

EIGHTY-EIGHTH ANNUAL SESSION
ARKANSAS MEDICAL SOCIETY
ARLINGTON HOTEL, HOT SPRINGS
MAY 3, 4, 5, AND 6, 1964

#### SCIENTIFIC SESSIONS

Sunday, May 3, 1964, 3:30 P. M.

The Urology Section will meet at 3:30 p.m. on Sunday, May 3rd, 1964, in Cafe 2 of the Arlington Hotel. Dr. Ormond Culp of the Mayo Clinic will be guest speaker. His topic will be "Therapeutic Tribulations."

The Section meeting will terminate with a cocktail party for Urologists and their wives.

## MORNING SESSION

## Crystal Ballroom, Arlington Hotel Monday, May 4, 1964

Dr. Guy Farris, First Vice President, presiding

8:00 a.m. Scientific Films:

"Early Plastic Repair of Finger Tip Injuries of Children." (30 minutes)

"Obesity—Some Highlights of Management." (25 minutes) Joint Scientific Session of the Arkansas Medical Society and the

Association of Tumor Clinic Staff Members in Arkansas

9:00 a.m. "Differential Diagnosis and Management of Pulmonary Lesions."

Moderator: Dr. Harley Darnall, Thoracic Surgeon, Fort Smith.

This subject will be discussed from the point of view of the following specialists:

Thoracic Surgeon:

Dr. Watts R. Webb, Chairman of the Division of Cardiovascular Surgery, The University of Texas Southwestern Medical School, Dallas, Texas

Pathologist:

Dr. John R. McDonald, Harper Hospital, Detroit, Michigan Radiologist:

Dr. Harry Z. Mellins, Department of Radiology, State University of New York, Brooklyn, New York

Anesthesiologist:

Dr. Glen Radcliffe, Baylor University School of Medicine, Houston, Texas

Announcement of new officers of the Association of Tumor Clinic Staff Members in Arkansas by Chairman, Dr. C. W. Anderson

10:30 a.m. Intermission

10:45 a.m. Panel Discussion moderated by Dr. Darnall
The Society wishes to express its thanks to the Association of Tumor
Clinic Staff Members in Arkansas for furnishing speakers for the above program.

11:45 a.m. President's Address

Dr. Joe Verser, Harrisburg, Arkansas

#### AFTERNOON SESSION

## Crystal Ballroom, Arlington Hotel

Dr. A. E. Andrews, Jr., Second Vice President, presiding

1:30 p.ni. "The Ferreting Out and Management of Urologic Disease in Children." Moderator: Dr. Sam Jameson, Urologist, El Dorado
This subject will be discussed from the point of view of the following specialists:

## Urologist:

Dr. Ormond Culp, Urology Department, Mayo Clinic, Rochester, Minnesota

#### Pediatrician:

Dr. Warren Dodge, Assistant Professor, Division of Renology and Metabolism, Department of Pediatrics, University of Texas Medical School, Galveston, Texas

## Child Psychiatrist:

Dr. O. L. Forbis, Jr., Assistant Professor of Psychiatry and Pediatrics, University of Arkansas Medical Center, Little Rock, Arkansas

## Field Pediatrician:

Dr. Weldon Rainwater, Blytheville, Arkansas

3:00 p.m. Intermission

3:20 p.m. Panel discussion moderated by Dr. Jameson

## SCIENTIFIC SESSIONS

## Tuesday, May 5, 1964

## Morning Sessions

8:00 a.m. Scientific Films, Crystal Ballroom, Arlington Hotel

"Smoking," American Cancer Society Film (25 minutes)

"Venomous Snakes" (11 minutes)

"Closed Chest Cardiac Resuscitation" (18 minutes)

9:00 a.m. (There is a choice of two subjects at this hour)

Subject # 1: "Differential Diagnosis and Management of Headaches".

Ballroom, Arlington Hotel, Dr. W. A. Fowler, Third Vice President, presiding

Subject # 2: "Obstetric and Gynecologic Emergencies" Fountain Room, Arlington Hotel

Speakers for "Differential Diagnosis and Management of Head-aches:"

Panel Moderator: Dr. William I. Porter, Neurosurgeon, Little Rock

Internal Medicine:

Dr. Ted Clemens, Jr., Oklahoma City Clinic, Oklahoma City, Oklahoma

Ear, Nose, and Throat:

Dr. Ben H. Senturia, St. Louis, Missouri

Psychiatry:

Dr. Charles S. Betts, Little Rock

Neurosurgery:

Dr. William I. Porter, Little Rock

Speakers for "Obstetric and Gynecologic Emergencies"

Panel Moderator: Dr. Willis E. Brown, Professor and Chairman of Department of Obstetrics and Gynecology, University of Arkansas Medical Center, Little Rock

Dr. J. Travis Crews, Clinical Assistant Professor of Obstetrics and Gynecology, University of Arkansas School of Medicine, Little Rock

"Differential Diagnosis of Postoperative Shock"

Dr. James Hagler, Clinical Instructor, Department of Obstetrics and Gynecology, University of Arkansas School of Medicine, Little Rock "Septic Shock"

Dr. Douglas M. Haynes, Professor of Obstetrics and Gynecology, University of Louisville School of Medicine, Louisville, Kentucky "Third Trimester Bleeding"

Dr. Byron Hawks, Associate Professor of Obstetrics and Gynecology, University of Arkansas School of Medicine

"Differential Diagnosis of the Acute Abdomen in the Female"

Dr. Harold A. Kaminetzky, Associate Professor of Obstetrics and Gynecology, University of Illinois College of Medicine, Chicago "Ectopic Pregnancy"

9:00 a.m. The E.E.N.T. Specialty Section Meeting will be held in the Cafe 2 of the Arlington Hotel. Speakers include: Dr. Jack S. Guyton of Detroit, Michigan, "Cataract Surgery"; Dr. Morriss Henry of Fayetteville, "Retinal Detachment".

10:30 a.m. Intermission

11:00 a.m. Panel Discussion—Subject # 1, Headaches

Crystal Ballroom, Arlington Hotel

Moderator: Dr. William 1. Porter

Panel Discussion—Subject # 2, Obstetric and Gynecologic Emer-

gencies

Fountain Room, Arlington Hotel Moderator: Dr. Willis E. Brown

### LUNCHEONS AND AFTERNOON SESSIONS

Tuesday, May 5, 1964

### PEDIATRICS, OBSTETRICS AND GYNECOLOGY

### Terrace Room, Majestic Hotel

12:15 to 2:15 p.m. Luncheon and Panel on Perinatal Problems

12:15 Luncheon

1:00 Perinatal Problems from Obstetric Standpoint, Dr. Byron Hawks, Little Rock

1:10 Perinatal Problems from Pediatric Standpoint, Dr. Alice G. Beard, Little Rock

1:20 Questions and Answers on Perinatal Problems

Moderator: Dr. John B. Nettles, Little Rock

Dr. Alice G. Beard, Little Rock

Dr. Douglas M. Haynes, Louisville, Kentucky

Dr. Byron L. Hawks, Little Rock

Dr. Harold A. Kaminetzky, Chicago, Illinois

### **RADIOLOGY**

The Arkansas Radiological Society will meet for luncheon at 12:30 p.m. on Tuesday, May 5th, in the Banquet Room of the Arlington Hotel.

#### **MEDICINE**

The Sections on Internal Medicine and Orthopedics will hold a joint meeting at 12:30 p.m. on Tuesday, May 5th.

Dr. Ted Clemens, Jr., of Oklahoma City, Oklahoma, will discuss "Occult Gastrointestinal Bleeding, the Problem"

### **GENERAL PRACTICE**

The Arkansas Academy of General Practice will meet for a luncheon and scientific program, beginning at 12:30 p.m. on Tuesday, May 5th, at the Velda Rose Motel.

Dr. Joe B. Hall of Fayetteville will discuss "Newer Aspects of Practical Treatment of Medical Diseases."

#### TUESDAY AFTERNOON

### May 5, 1964

2:30 p.m.	Obstetrics-Gynecology Meeting
	Mayfair Room, Majestic Hotel
	Dr. Willis E. Brown, presiding

- 2:30 p.m. "Diagnosis and Management of Recurrent Carcinoma of the Cervix," Dr. Doulgas M. Haynes, Louisville, Kentucky
- 3:15 p.m. "Office Curettage and Pitressin Conization of Cervic," Dr. Wayne Workman, Blytheville
- 3:30 p.m. Coffee Break and Business Meeting
- 3:45 p.m. "Simplified Obstetric and Gynecologic Care," Dr. Harold A. Kaminetzky, Chicago, Illinois
- 4:15 p.m. "Radiation Response and Resistance in Cervical Carcinoma," Dr. Arthur Hoge, Fort Smith

### SCIENTIFIC EXHIBITS

### Mezzanine Lobby of the Arlington

"Cardiovascular Surgery During the First Year of Life"

Dr. Denton Cooley and Dr. Grady Hallman, Baylor University College of Medicine, Houston Texas

(Exhibit details experience with surgery for anomalies of the heart and great vessels in 500 infants less than one year of age).

"Comprehensive Care of the Burned Patient"

Exhibit will cover several aspects of the pre-operative evaluation, operation, and postoperative evaluation of severe burns.

### COMMERCIAL EXHIBITORS

The business firms who purchase exhibit space at our Annual Session contribute a great deal to the financing as well as to the educational aspects of the meeting. The number of visits to the commercial exhibits is the only criteria by which these companies can judge the value they receive from the investment in booth rental, displays, and employees' time. You will be rewarded for the time you spend visiting the exhibits.

### MERCK, SHARP & DOHME

The theme of the Merck, Sharp & Dohme exhibit is "SERVICE TO MEDICINE." One phase features the details of the Merck, Sharp & Dohme Postgraduate Program. Another feature includes information on teaching films for use by the profession and, also, lay films that can be utilized to portray the story of medicine to the lay public. The exhibit is concluded with a display of finger-tip files on selected Merck, Sharp & Dohme products.

#### PFIZER LABORATORIES

Professional Service Representatives from Pfizer Laboratories will be pleased to have you in attendance at their booth to discuss the latest products of Pfizer research.

### DABBS-SULLIVAN COMPANY

Mr. Melvin Spear, Account Executive with Dabbs-Sullivan Company, Inc., will exhibit pamphlets and brochures regarding investment securities. Included in this exhibit are Mutual Fund Prospectus and associated literature. Mr. Spear is available to answer any of your questions.

### WARNER-CHILCOTT LABORATORIES

Warner-Chilcott Laboratories will feature the following products at Exhibit Space # 10: GELUSIL (R) and PAPASE (R).

### THE COCA-COLA COMPANY

Ice-cold Coca-Cola served through the courtesy and cooperation of the Coca-Cola Bottling Company of Hot Springs, and The Coca-Cola Company.

### THE STUART COMPANY

A cordial invitation is extended to all members and guests attending this meeting to visit the Stuart Company booth. Specially trained representatives will be in attendance to answer your questions on new products, developed in our modern laboratories, which have particular interest for the medical profession. Products featured are MYLANTA, STUART PRENATAL-F. MULVIDREN-F, CARI-TAB, and MULVIDREN JUNIOR.

### G. D. SEARLE & COMPANY

You are cordially invited to visit the Searle Booth where our representatives will be happy to answer any questions regarding Searle Products of Research. Featured will be ENOVID for ovulation control and pregnancy and menstrual disturbances and FLAGYL, a potent, new trichomonacidal agent for trichomonal vaginitis, cervicitis, urethritis and prostatitis.

### FIRST TEXAS PHARMACEUTICALS, INC.

Our exhibit will be staffed by personnel who will be pleased to discuss the several products on our exhibit, and we extend to you a cordial invitation to visit us at our booth.

### MEAD JOHNSON LABORATORIES

The Mead Johnson Laboratories' exhibit has been arranged to give you the optimum in quick service and product information. To make your visit productive, specially trained representatives will be on duty to tell you about their products.

### MEDCO PRODUCTS, INC.

If you are one of our many thousands of MEDCO-SONLATOR users, you will be interested in seeing the ultimate in COMBINATION therapy of Ultrasound-Electrical Muscle Stimulation and D. C. (Galvanic) combined in the most attractive package — the MEDCO-SONLATOR MARK V. We welcome your visit to our booth.

### ARKANSAS MEDICAL AND HOSPITAL SERVICE, INC.

The Blue Cross-Blue Shield booth is for your convenience and we welcome your visit. As a participating physician with Blue Cross-Blue Shield, we urge you to become thoroughly familiar with your local plan. Our representatives will be most happy to visit with you to discuss any matter pertaining to the principles, philosophy or operation of Arkansas Blue Cross-Blue Shield. We are justly proud of the contributions of Arkansas Blue Cross-Blue Shield to the citizens of Arkansas over the past 15 years. With your cooperation, we can continue to perform this service.

### PARKE, DAVIS & COMPANY

Medical service members of our staff will be in attendance at our booth to discuss important Parke-Davis specialties which will be on display.

### E. R. SQUIBB & SONS

E. R. Squibb & Sons has long been a leader in development of new therapeutic agents for prevention and treatment of disease. The results of our diligent research are available to the medical profession in new products or improvements in products already marketed. At booth 23, we will be pleased to present up-to-date information on these advances for your consideration.

#### GEIGY PHARMACEUTICALS

Geigy Pharmaceuticals cordially invites members and guests of the Association to visit its exhibit. The exhibit features important new therapeutic developments in the management of cardiovascular disease as well as current concepts in the control of inflammation; hypertension and edema; depression; obesity; and other disorders, which may be discussed with representatives in attendance.

### ABBOTT LABORATORIES

Abbott Laboratories invites you to visit our exhibit. Our representatives will be happy to answer any questions you may have concerning our leading products and new developments.

### SANDOZ PHARMACEUTICALS

Sandoz Pharmaceuticals cordially invites you to visit our display at booth # 26, where we are featuring Mellaril, Sansert, Cafergot P-B, Fiorinal and Fiorinal with codeine. Any of our representatives in attendance will gladly answer questions about these and other Sandoz products.

### JULIUS SCHMID, INC.

An interesting and informative exhibit leaturing IMMO-LIN Vaginal Cream-Jel for use without a diaphragm, RAMSES Flexible Cushioned and BENDEX Diaphragms; RAMSES Vaginal Jelly; VAGISEC Liquid and VAGISEC PLUS Jelly and Suppositories for vaginal trichomoniasis therapy; and XXXX (Fourex) Skin Condoms, RAMSES, SHEIK and SHEIK Lubricated Rubber Condoms for the control of trichomonal re-infection.

### A. H. ROBINS COMPANY, INC.

Welcome to the convention, Doctor, from the A. H. Robins Company. We hope you can stop at our display for a moment. The representatives there will be happy to answer any questions you may have about our products and explain their advantages. PRODUCTS FEATURED: Robinul—Robinul-PH and Donnatal.

### WM. T. STOVER COMPANY, INC.

The Wm. T. Stover Company, Inc., enjoying its 24th year of service to the medical profession, will occupy Booths 29 and 30, which will be staffed by informed and qualified representatives—eager to welcome you and assist in any manner possible—as well as to show you the up-to-date developments in the medical and surgical industry.

#### WALLACE LABORATORIES

The representatives of Wallace Laboratories will be glad to discuss "Miltown." "Miltown" is proven for relieving both anxiety and tension. In addition, the drug acts as an interneuronal blocking agent at the spinal cord providing effective relief of muscle spasm. "Miltown" is available in 200mg. and 400mg. dosage strengths and also as "Meprospan," a 200mg. and 400mg. prolonger release capsule and "Meprotabs," a 400mg. coated tablet.

### ARKANSAS X-RAY & SURGICAL, INC.

Our exhibit will feature the new "Ritter 75 Table" which now offers a choice of seven colors in exclusive changeable cushions. The new Bantam Bovie, small enough and light enough to hang on the wall. The No. 8 Examination Light and the new Imperial Modular Valtronic, a new concept in functional professional equipment for the physician's office. The X-Ray Department will be represented and will show the new Electra 100 MA-100 P.K.V. Multipurpose Physicians X-Ray unit with rotating anode tube, recipromatic bucky, lead screen, horizontal table and motor driven tube stand, economical, contemporary, completely versatile.

CONTOUR CHAIR COMPANY
U. S. VITAMIN CORPORATION
CIBA PHARMACEUTICAL PRODUCTS, INC.
KAY SURGICAL, INC.

THE NATIONAL DRUG COMPANY
HERBERT COX CORRECT SHOES
ELI LILLY & COMPANY
ST. PAUL INSURANCE COMPANIES

### GENERAL INFORMATION REGISTRATION

The registration fee of \$15 includes one ticket to the cocktail party, banquet, and floor show on Tuesday evening, May 5th.

The registration desk will be located on the Mezzanine floor of the Arlington Hotel, and will be open from 10:00 a.m. to 5:00 p.m. on Sunday, May 3rd; from 8:00 a.m. to 5:00 p.m. on Monday and Tuesday, May 4 and 5, and from 8:00 a.m. to noon on Wednesday, May 6.

Registration cards and badges will be prepared in advance for the officers of the Arkansas Medical Society and for the county society delegates. Delegates are requested to present credentials in proper form when registering.

All members and visitors are required to register, as admission to all sessions will be by badge. Bring your 1964 membership card to facilitate registration. Members of the American Medical Association from other states may register as guests.

Special telephone service will be maintained at the registration desk—phone number NAtional 4-4551.

### PAST PRESIDENTS' BREAKFAST

The Past Presidents' Breakfast will be held in Cafe 2 of the Arlington Hotel at 7:30 a.m. on Wednesday, May 6.

### FIFTY YEAR CLUB BREAKFAST

A breakfast for members of the Fifty Year Club of the Arkansas Medical Society will be held in the Montague Room of the Arlington Hotel at 7:30 a.m. on Tuesday, May 5. Members of the Fifty Year Club are requested to make a reservation for this breakfast at the Society convention registration desk.

### **GOLF TOURNAMENT**

The Annual Golf Tournament will be played at the Hot Springs Country Club on Sunday, Monday and Tuesday, May 3, 4, 5. Register with club pro at Pro Shop. Members of the Tournament Committee are: Robert F. McCrary, Chairman; Buford Stough III, Louis McFarland, and J. C. McMahan.

### **REUNION OF DECEMBER 1944 CLASS**

The University of Arkansas Medical School's Class of December 1944 will hold a reunion on Monday evening, May 4th, at the Hot Springs Country Club, beginning at 6:30 p.m. There will be a cocktail party, dinner, and dancing.

A section of seats for the December 1944 class will be reserved at the President's Banquet in the Main Dining Room of the Arlington Hotel on Tuesday evening, May 5th.

### REUNION OF CLASSES OF 1938 AND 1939

A combined reunion of the Classes of 1938 and 1939 of the University of Arkansas School of Medicine will be held on Monday evening, May 4th, beginning with a cocktail party at 6:30 p.m., in the Fountain Room of the Arlington Hotel. Dinner will be served at 7:30 p.m. Mr. Bo Rowland will be the after-dinner speaker.

### MEMORIAL SERVICE

A joint Memorial Service of the Arkansas Medical Society and the Woman's Auxiliary will be held in the Crystal Ballroom of the Arlington Hotel, beginning at 11:45 a.m. on Tuesday, May 5th. Dr. Joe Verser, president of the Society, will preside.

Invocation: Dr. Joe Reid, Arkadelphia

Reading of the names of deceased members of the Auxiliary by Mrs. A. E. Thorn, Auxiliary Chaplain.

Reading of the names of deceased members of the Society by Dr. Verser:

Dr. E. J. Byrd, Camden, December 25, 1963

Dr. Charles B. Dixon, Van Buren, June 30, 1963

Dr. Robert M. Eubanks, Little Rock, January 17, 1964

Dr. L. T. Evans, Batesville, October 3, 1963

Dr. Hugh M. Fogo, Harrison, April 27, 1963

Dr. James D. Gardner, Fort Smith, April 28, 1963

Dr. H. Fay H. Jones, Little Rock, May 23, 1963

Dr. B. Ainsworth Kuehne, Little Rock, December 29, 1963

Dr. Earle W. Pearson, Jr., Little Rock, June 10, 1963

Dr. David Sinton, Little Rock, January 23, 1964

Memorial address: Dr. Amail Chudy, North Little Rock

Benediction: Dr. Reid

Lift Thine Eyes \_\_\_\_\_ Mendelssohn

Arkansas College Lassies, Mrs. Paul Gray, Director

### ANNUAL PRESIDENT'S BANQUET

The Cocktail Party and President's Banquet will be combined into one function this year and a floor show will be staged by Berl Olswanger.

The Cocktail Party will begin at 6:00 p.m. in the Arlington Hotel. Dinner will be served buffet style, beginning at 7:00 p.m. in the Main Dining Room of the Arlington Hotel.

After dinner, the new president of the Society will be installed, followed by entertainment.

### **BUSINESS SESSIONS—**

### MEETINGS OF THE COUNCIL

The Council of the Arkansas Medical Society will meet as follows:

Sunday, May 3, 1964, 12:00 noon, Montague Room, Arlington Hotel Monday, May 4, 1964, 12:00 noon, Montague Room, Arlington Hotel Tuesday, May 5, 1964, 12:00 noon, Montague Room, Arlington Hotel Wednesday, May 6, 1964, 9:00 a.m., Montague Room, Arlington Hotel Wednesday, May 6, 1964, immediately following adjournment of House of Delegates.

(The voting members of the Council are the councilors, the president, the first vice president, president-elect, secretary and treasurer. The Speaker and Vice Speaker of the House of Delegates and the past presidents are members ex-officio without vote.)

#### REFERENCE COMMITTEE HEARINGS

Reference Committees appointed by the Speaker of the House of Delegates will hold open hearings to discuss resolutions and committee reports referred to them as follows:

Committee Number One—Will meet on Monday, May 4, at 10:00 a.m., in Cafe 2 of the Arlington Hotel.

The members of Reference Committee Number One are:

Joseph A. Buchman, Little Rock, Chairman

Ross Maynard, Pine Bluff

John P. Price, Monticello

Committee Number Two-Will meet at 10:00 a.m. on Tuesday, May 5, 1964, in the Library of the Arlington Hotel.

The members of Reference Committee Number Two are:

Guy P. Shrigley, Clarksville, Chairman

Ben M. Saltzman, Mountain Home

James W. Headstream, Little Rock

### FIRST MEETING

### HOUSE OF DELEGATES

Sunday, May 3, 1964, 3:30 P. M.

### Fountain Room, Hotel Marion

The first session of the House of Delegates will convene at 3:30 p.m. in the Fountain Room of the Arlington Hotel on Sunday, May 3rd. The order of business will be as follows:

Call to Order

Roll Call of Delegates

Report of Credentials Committee

Introduction of Guests

Adoption of Minutes of the Eighty-Seventh Annual Session as published in the June 1963 issue of the Journal of the Arkansas Medical Society

Report of the Council

Report of Committees

(Reports as published in the March 1964 issue of the Journal may be amended by Committee chairmen. All reports will be referred to the Reference Committees.)

New Business

Announcements of vacancies on the Arkansas State Board of Health and Arkansas State Medical Board

Selection of Nominating Committee

Adjournment

### ELECTION TO FILL VACANCY ON THE ARKANSAS STATE MEDICAL BOARD

A vacancy occurs in the First Congressional District, the counties of which are listed below. Members from these counties are urged to meet in the Fountain Room of the Arlington Hotel immediately following the House of Delegates

meeting on Sunday, May 3rd, to vote for nominees. Nominations should be reported to the convention registration desk.

Present Member: Dr. E. D. McKelvey, Paragould, who is eligible for reappointment.

Counties: Clay, Craighead, Crittenden, Cross, Greene, Lee, Mississippi, Phillips, Poinsett, and St. Francis.

### ELECTION TO FILL VACANCY ON THE ARKANSAS STATE BOARD OF HEALTH

A vacancy occurs in the Fifth Congressional District, the counties of which are listed below. Members from these counties are urged to meet in the Fountain Room of the Arlington Hotel immediately following the House of Delegates meeting on Sunday, May 3rd, to vote for nominees. Nomination (three must be submitted for each vacancy) should be reported to the convention registration desk.

Present Member: C. A. Archer, Jr., Conway, who is eligible for reappointment. Counties in district: Conway, Faulkner, Perry, Pope, Pulaski, and Yell.

#### FINAL SESSION

### HOUSE OF DELEGATES

10:00 A. M., Wednesday, May 6th, 1964

### Ballroom, Arlington Hotel

The final meeting of the House of Delegates will convene at 10:00 a.m. on Wednesday, May 6th, in the Ballroom of the Arlington Hotel. The order of business is as follows:

Roll Call

Report of Nominating Committee

Election of Officers:

President-elect

First Vice President

Second Vice President

Third Vice President

Treasurer

Secretary

Speaker of the House of Delegates

Vice Speaker of the House of Delegates

Councilors (one from each of the ten districts)

Councilors whose terms expire are:

1. Paul Ledbetter, Jonesboro

- 2. Hugh R. Edwards, Searcy
- 3. G. A. Sexton, Forrest City
- 4. H. W. Thomas, Dermott
- 5. John L. Ruff, Magnolia
- 6. John P. Wood, Mena
- 7. Martin Eisele, Hot Springs
- 8. Joseph A. Norton, Little Rock
- 9. Ross Fowler, Harrison
- 10. L. A. Whittaker, Fort Smith

Delegate to the American Medical Association House of Delegates (term of Dr. James M. Kolb, eligible for re-election, expires December 31, 1964)

Alternate Delegate to the American Medical Association House of Delegates (term of C. C. Long, eligible for re-election, expires December 31, 1964)

Report of Reference Committees

Supplementary Report of the Council

Report of Committees

New Business

Selection of Time and Place of 1965 Meeting

Adjournment

### **Annual Committee Reports**

### COMMITTEE ON PUBLIC HEALTH

Ben N. Saltzman, Chairman

The sub-committees on Public Health have been active this year, and their reports are reproduced below:

### SUB-COMMITTEE ON RURAL HEALTH

The Rural Health Committee has had a very busy year. Most of its work has been concerned with the preparations and accomplishment of the National Rural Health Conference that was held in Hot Springs, September 20 and 21. This was one of the most successful Rural Health Conferences experienced by the Council on Rural Health since its origin in 1915. The attendance was great, the program was outstanding, and appreciation of the Arkansas Committee and the people of the State was noted by the American Medical Association. The Chairman has been particularly active in relation to his work on the Board of Directors of the Rural Community Improvement Clubs of the State of Arkansas. He has also been active on the Joint Council on Aging and has attended two meetings of that council.

The Chairman spoke to the National Home Demonstration Council meeting held in Little Rock on October 22. He participated in a National Safety Congress held in Chicago on April 1. As an executive committee member of the Council on Rural Health, he has attended meetings in Atlantic City, New Jersey and in Portland, Oregon. He has spoken to the American Public Health Association Conference of Public Health Veterinarians in Kansas City.

The Committee is also making plans for the State R.C.I. meeting to be held in Little Rock in March.

This Committee has established liaison with the Farm Bureau, the Agricultural Extension Service, the State Dental Association, the Public Health Association and the Woman's Auxiliary. These groups have worked together beautifully over the years and continue to do so in the realm of rural health. This Committee is one of the best means the Medical Society has of promoting better public relations.

### SUB-COMMITTEE ON LIAISON WITH THE STATE BOARD OF HEALTH

C. Lewis Hyatt, Chairman

I. Dr. J. T. Herron, State Health Officer, and various members of his staff of the State Health Department, have conferred with the chairman of the sub-committee on numerous occasions during the past year. The department's establishment of the chest clinics in various areas of the state, in an effort to improve tuberculosis control, as referred to in last year's report of this subcommittee, is progressing nicely. To date, 39 chest clinics have been established in 27 counties of the state. Approximately 1500 individual cases were evaluated in these 500 clinic sessions. These clinics are made possible through local medical groups requesting the clinic and co-operating in the service. A special state Health Department appropriation and a special grant from the United States Public Health Service makes these effective and valuable clinics possible.

- 2. The chairman, through the State Health Officer, has been kept up to date and informed of the progress of the newly established chronic disease program of the State Health Department. The establishment of this program in a local area is first requested by the local Medical Society. This program has now been established in 20 counties of the state and is being well received by physicians, patients and the families of patients. During the past fiscal year 10.078 nursing home visits were made on the request of the family physician. The public health nurse makes the home visit when requested by the physician, carries out his orders and reports the results of the visit to the physician.
- 3. The Council of the State Medical Society, along with the chairman of this committee, was approached and informed of the State Health Department's plans during 1961, which were approved, regarding the following two previously established programs:
  - (a) Expansion and intensification of the immunization program. A special \$60,000.00 on a three-year-plan basis provides for the expansion and intensification of the present state-wide immunization program with emphasis on the under-age-30-years group and special emphasis on under-age-5-years. The execution of this program is to be emphasized and directed to the private and/or family physician. Immunization against diphtheria, tetanus, pertussis, polio-myelitis and small-pox are to be emphasized.
  - (b) The Radiological Health program of the State Health Department during 1961 will offer to local medical groups seminars on the safety factors of ionization and radiation. These seminars will be requested by local medical societies. The instructors and speakers in these seminars will be nationally known authorities, physicians, physicists, etc. The local physicians attending the seminars along with his local medical group can then pass the newly acquired information on to allied personnel working with him where radiation hazards may exist.

Again, I would like to commend our State Health Officer, Dr. J. T. Herron, and his staff, on the excellent work being done by the State Health Department in protecting the public health of our citizens. The helpful programs that the department so ably executes on a very meager state appropriation, low salaries, and an inadequate number of qualified professional personnel is unbelievable. The department, under its present direction, can always be depended upon to work in the interests of the medical profession of the state and its citizens.

### SUB-COMMITTEE ON MATERNAL AND CHILD WELFARE

Thomas E. Townsend, Chairman

The Sub-Committee on Maternal and Child Welfare has not had a formal meeting. I was approached by representatives of the G. D. Searle Company as to the possibility of some type birth control plan for the lower income fami-

lies. After discussing this with various physicians and Dr. Herron, we decided to delay any decision at the present.

### SUB-COMMITTEE ON MENTAL HEALTH

William O. Young, Chairman

The Sub Committee on Mental Health feels that it is more urgent than ever before that the Arkansas Medical Society, as an organization and as individual members, take a more active interest in the problems of mental health in Arkansas and in plans to meet these problems. We know that many nonprofessional people are quite interested in the problems of mental health and at this time would like to have advice and guidance from the medical profession. The Federal Government has become much more interested in this health problem, and is taking steps to help the various states cope with the problem. Right now it is extremely important that the medical profession in Arkansas take the lead in deciding how our problems of mental health should be met and, as doctors, make the final decision on the utilization of all resources that are or may become available.

We feel that these are the problems which most urgently need to be met:

- 1. We need a wider distribution of trained psychiatrists throughout the state, so that they will be easily available to the other practitioners of medicine for consultation and psychiatric treatment. This will mean having more psychiatrists in private practice.
- 2. It is essential that there be a way to add additional knowledge concerning the treatment of emotionally disturbed patients through all the fields of medicine. We feel that doctors of medicine who are not psychiatrists should feel comfortable and competent to care for a large percent of the emotional illnesses they see in their practices.
- 3. We should encourage a decentralization of hospital and treatment facilities throughout the State rather than locate all of these in one area.
- 4. The location of area or district mental hospitals, mental health clinics, and other mental health facilities should be logically determined by population concentration, availability to the people served, and need rather than for any other reason.
- 5. We feel that it is quite important that the various agencies that deal with mental health, including the Medical Center, the State Hospital, various district facilities, training schools for boys and girls and care of the retarded be better co-ordinated. We urge the State Society to consider various ways of setting up co-ordinating agencies for some or all of these institutions and that we be in a position to make definite recommendations to the next Legislature.

There are some important moves within the State which are directed toward meeting the above needs. The Medical School, the State Hospital, and the Veterans Administration Hospital are all constantly trying to improve and expand their residency training program. The state agencies have been selecting their residents from those whom they feel have an interest in remaining in Arkansas to help meet this critical shortage.

The Medical Center has organized, in the Department of

Psychiatry, a plan to present programs of interest in the fields of mental health to groups of interested physicians in different parts of the State. Your own committee has offered to help organize programs for local Societies or Councilor Districts in the field of mental health wherever they are desired. The Medical School and the State Hospital have made plans to organize a training program that can be fitted into an active practice for small groups of physicians who would like to acquire more training in the treatment of mental and emotional illnesses within their own fields of practice. Both institutions are willing to arrange these at the convenience of interested doctors.

The program "A Plan for Planning" was started by the State Health Officer as the State Mental Health Authority during the past year. It is directed by a member of the Arkansas Medical Society who is on the faculty of the Psychiatric Department at the Medical Center. Several members of your committee are participating in this program, which is a survey of the State to determine mental health needs. Your committee strongly urges all members of the Society to assist and take an active part in this study,

The committee urges each County Society to appoint a Mental Health Committee or a Mental Health Chairman. In this way the activities of the State Society may be more properly directed to the County Societies and we may better co-ordinate our efforts. The Sub-Committee on Mental Health plans to try to keep the membership of the State Society informed at frequent intervals concerning the progress that is being made in the State and the progress that is made in the Federal program for mental health and for mental retardation. We plan to have a statewide conference on Mental Health sponsored by the Arkansas Medical Society during the coming year.

We again want to stress to the Society that the problems of mental illness are among the most pressing problems facing the people of Arkansas and the medical profession today. We must all work to meet this problem.

### SUB-COMMITTEE ON STATE HEALTH AND MEDICAL RESOURCES FOR CIVIL DEFENSE

Charles F. Wells, Chairman

The Committee has been interested in trying to determine what would be expected of the medical profession in the catastrophic eventuality of thermo-nuclear attack.

We knew that there was a state agency concerned with Civil Defense with headquarters in Conway, Arkansas, and contacted the director, Mr. Stewart Prosser. In the initial discussion with him we determined that survival and recovery activities would necessarily depend heavily upon the medical profession, but that planning in Arkansas had not yet reached the stage where specific assignments for physicians had been made. We were advised that the State Board of Health had been enlisted to integrate the medical resources of the State into the overall plan for recovery, and that Dr. Harvie R. Ellis had been appointed director of the Health Mobilization Planning Program.

Subsequently, a meeting was arranged with Mr. Prosser and members of his staff, Dr. Ellis, and Public Health Service personnel whose jobs were concerned with the National Civil Defense Program.

The most immediate need as expressed by Dr. Ellis is to

secure the co-operation and the whole-hearted participation of all members of the Society in the program for Medical Self-Help Training which is sponsored by the State Board of Health. This is the program whereby individuals throughout the State are instructed in first aid and other measures to be independent for whatever necessary period of time until professional medical services could be secured in time of national disaster. One important part of this program is the Civil Defense Emergency Hospital Program. This also is now under the direct control of the State Board of Health. There are seventeen emergency hospitals stationed around the State and held in readiness for immediate use in the event of a national disaster. These hospitals would, of course, necessarily be staffed by available medical personnel as well as trained anciliary service personnel. A state-wide meeting is to be held in Little Rock on May 13 and 14 which is to be known as the Emergency Help and Health Joint Auspices of the Civil Defense Agency and the State Board of Health. The Arkansas Medical Society is to be asked to co-sponsor the State-line Training Course. We would encourage active participation in this program and would urge that the Medical Society try to secure one or more representative from each county medical society to attend this training course and report its activities to the county medical society as a program. Of particular interest in this program is a demonstration of the setting-up of one of the Civil Defense emergency hospitals and an exercise to demonstrate the operation of this facility. The Committee plans to meet with Society Officers and Dr. Ellis to discuss this particular program and Medical Society participation in it, as well as future planning for integrating Medical Society participation in plans for Civil Defense.

Other activities of this committee entailed the chairman's participation in a state-wide plan for planning which is a program of the Mental Health Association for a long-term program of improvement of Mental Health Services for the State. As a part of the activities in this program, the committee chairman has participated as the head of a task force which is studying the area of out-patient treatment facilities. This is only one of the eight task forces involved in this long term program for improved care and prevention of mental illness. This program is scheduled to encompass eighteen months and when completed the combined efforts of the individual task forces will be analyzed and grouped into one over-all plan which will be presented to the Governor of the State and the Legislature. The chairman of the Society Civil Defense Committee will continue to serve on this task force.

### SUB-COMMITTEE ON POSTGRADUATE EDUCATION

G. F. Wynne, Chairman

A representative of the Sub-Committee on Post-Graduate Education met with the representative of the Committee on Psychiatry on November 13, 1963, at the office of Dr. W. O. Young, 1121/2 E. 7th Street, Little Rock, Arkansas.

Plans were made for the post-graduate training in mental illness with special emphasis on training of the general practitioners of the state. The needs of the general practitioners were discussed in detail. Following the discussion. Dr. Young and his committee will correlate these ideas with

the teaching staff of the Arkansas Medical School.

It is hoped that a post-graduate seminar in mental illness and psychiatry will be held early in 1964.

### COMMITTEE ON HOSPITALS

Amail Chudy, Chairman

Several important points were discussed by your Committee on Hospitals in 1963.

Those with greatest debate were: Bed shortage, public relations concerning hospitals and patients, visiting hours and a closer tie between administration and physician. The latter subject was stressed by several.

It is hoped this may be carried forward in 1964.

### COMMITTEE ON PUBLIC RELATIONS

John McCollough Smith, Chairman

The Public Relations Committee has been chiefly concerned with a continuation of the Sabin Oral Polio Vaccine program throughout the state. It has been encouraging to note that the Pulaski County program has been eminently successful and that surplus funds from this particular program have been channeled back to school libraries throughout the county. The Public Relations program has concentrated on encouraging all county medical societies to initiate Sabin Oral Polio programs as soon as possible.

### ADVISORY COMMITTEE TO ARKANSAS STATE MEDICAL ASSISTANTS SOCIETY

Kenneth R. Duzan, Chairman

As Chairman of the Advisory Committee to the Arkansas State Medical Assistants Society, I would like to report that the Society is still growing and showing much progress in its continued search for education and self improvement of the medical assistant.

All officers of the society have carried out their duties capably and the committee chairmen have functioned diligently. One new County Society, Arkansas County, has been organized during the past year, bringing the total membersh:p of the state society to over 200.

Three House of Delegates meetings have been held and all business transacted in accordance with the wishes of the Medical Society.

The University of Arkansas Division of General Extension has established a program of courses available through correspondence to all medical secretaries and medical assistants who wish to enroll.

The American Association of Medical Assistants now has an established Certification Program for Medical Secretaries and Medical Assistants and 24 medical assistants have passed the first certification examination which was given in October, 1963.

Five medical assistants from Arkansas attended the National Convention of A.A.M.A. held in Miami Beach, Florida, in October, 1963. During this convention, Mrs. Frances Reibe, a past president of the Arkansas Society, was elected to the combined office of Secretary-Treasurer of the National Society.

The group has gone all out, both as an organization and as individuals, to help the Medical Society in its fight against

the King-Anderson Bill and all other proposed legislation of a socialistic nature.

Most County Societies contributed much time and effort in helping the Medical Society carry out an effective program with the Sabin Oral Polio Vaccine Clinics.

The 10th Annual Convention of the Society will be held in Fayetteville, April 18-19, 1964, at the Holiday Inn and promises to be an educational and entertaining weekend.

I would strongly recommend that the Arkansas Medical Society give its continued support to the group as they are deserving of our confidence in them.

#### COMMITTEE ON INSURANCE

### Thomos D. Honeycutt, Choirmon

The Insurance Committee during 1963 has been active only in the area of surveillance of the various forms of group insurance sponsored by the Society or endorsed by the Arkansas Medical Society. These include: Group Life Insurance, Disability Insurance, Professional Overhead Expense Insurance, and Comprehensive Professional Liability Insurance.

### GROUP LIFE INSURANCE

There were three significant developments in 1963 with reference to the above group.

- 1. Last August 1st a dividend was paid to participating members. The amount was 5.6% of their premium. For the year 1964 the February dividend will be the same, and I am happy to report that the dividends will be increased on the premium that is due August 1st.
- 2. Members who had previously purchased the basic \$10,000 of life insurance had the opportunity to purchase an additional \$10,000 without being required to furnish any evidence of insurability. I am happy to report well over one hundred took advantage of this.

The members who were presently insured were able to add a Family Insurance Rider without furnishing any evidence of insurability on their family. This rider provided \$2,500 life insurance on the wife and \$1,000 on each child under age 21. Participation was very good in this enrollment.

This coming year, probably prior to August 1st, I hope to be able to offer \$10,000 of insurance to members of the Arkansas Medical Society under age 50 who have not previously enrolled in this plan. Negotiations have been going on with the Northwestern National Life Insurance Company but plans are incomplete at this time.

During 1963, three death claims were paid for \$30,000 and two policies were approved to have their premiums waived because of the physician being disabled.

### GROUP PLAN OF DISABILITY INSURANCE

Number of Policies in Force	324
Premium Income	\$55,426.22
Lapses	11
Termination Due to Death	3
Termination Due to Age	0
Premium Waived Due to Disability	
Number of Claimants	54
Amount of Claims Paid	\$36,036.04
Number of Payments Made	118

Ratio of Claims	Paid to	Přemium	Income	65%
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A net gain of 17 in the number of persons insured was accomplished during the year. A new and broader policy was introduced during the year offering higher weekly benefits and longer benefit periods.

### GROUP PLAN OF PROFESSIONAL OVERHEAD EXPENSE INSURANCE

Number of Policies in Force	86
Premium Income	
Lapses	2
Termination Due to Death	
Termination Due to Age	
Number of Claimants	
Amount of Claims Paid	\$ 1,733.33

There was a net gain of 9 in the number of persons insured.

### COMPREHENSIVE PROFESSIONAL LIABILITY

Physicians and Surgeons Covered 168
Claims Outstanding 3
Set aside in reserve to pay these claims if needed \$12,000.00

The St. Paul Insurance Companies have a new filing, which should be of material benefit to the physicians of the Arkansas Medical Society. This new filing has nothing to do with the rates under the Professional Liability Policy but is a package policy which will result in a savings to the physicians.

The committee wishes to extend its thanks to the companies involved in writing these insurance programs for their co-operation and efficient handling of recruitment, claims, and payment of claims.

The Group Life Insurance policy is underwritten by the Northwest National Life Insurance Company and administered by Mr. Meyer Marks, Commercial National Bank Building, Little Rock, Arkansas.

The Group Disability and Professional Overhead Expenses policies are administered by Rather, Beyer & Harper, 223 Louisiana Street, Little Rock, Arkansas.

The Professional Liability policy is underwritten by The St. Paul Insurance Companies and administered by Mr. J. L. Byers, State Agent, 314 Hall Building, Little Rock, Arkansas.

Any physician recently joining the Arkausas Medical Society, and in certain cases, members who have not participated in these plans before, will be eligible to join many of these plans. Inquiries concerning any of the types of insurance mentioned should be directed to the company administering that particular plan.

### TRAFFIC SAFETY COMMITTEE

Louise M. Henry, Chairman

The majority of the committee favored providing safety driving pamphlets for distribution to patients. Funds are not yet available for purchase of these pamphlets in sufficient quantity.

"A Prescription for Safe Driving," which endorses the use of seat belts, is readily available from the office of the executive secretary. It may be enclosed with the monthly statements. Permission for its use by the Arkansas Medical Society was given Mr. Paul Schaefer by the California Medi-

cal Association, who devised it.

Pertinent subjects under investigation by this committee are: Implied consent law; point system for traffic violators; vehicle inspection law; estimation of the amount of absence of alcohol in the breath of a person involved in a traffic accident.

Our program is for continued study of factors contributing to highway accidents and ways of reducing them,

### COMMITTEE ON CONSTITUTIONAL REVISION

Louis K. Hundley, Chairman

The Committee on Constitutional Revision wishes to call to the attention of the members the following proposed revisions of the Constitution which were read at the 1963 meeting of the Society and with this report are printed for the second time as required by the Constitution. These proposed amendments should be considered and voted upon and either rejected or given final approval at this 1964 meeting of the Society.

### No. I-NATIONAL LEGISLATIVE COMMITTEE

Amend By-Laws, Chapter VIII, Section 1(a) '2' to read:

2. Committee on Medical Legislation (Sub-Committee on National Legislation) (adds words "sub-committee on national legislation").

#### No. 2-EXEMPTIONS

Delete Section IV, Article IV of Constitution (provision for "military members" changed to by-laws).

Amend By-Laws, Chapter I, Section IV to read:

Section 4. Life Membership

An active member who shall have attained his eightieth year and shall have been a member of his county medical society in Arkansas or elsewhere in the United States continuously since beginning the practice of medicine, or who for fifty years shall have been continuously a member of his county medical society in Arkansas or elsewhere in the United States, shall, upon establishing the above facts to the satisfaction of his county medical society, and upon the recommendation of such society, be granted the status of a Life Member. Such member shall enjoy full membership privileges and shall be exempt from the payment of further dues or assessments. (makes life membership a separate section)

Add Section 5:

Section 5. Affiliate Membership

An active member in good standing in his county society may, upon the recommendation of such society, be granted affiliate membership with full voting and other privileges where one or more of the following conditions exist: retirement from active practice, physical or other disability of a character preventing the practice of medicine, a serious and prolonged illness, or financial reverses. Affiliate membership shall be on an annual basis only and a member must be recommended each year for such special status by the secretary and president of his county medical society following a review and reassessment of his particular situation. An affiliate member shall enjoy full membership privileges and shall be exempt from the payment of dues and assessments during the year in which he is granted such status, and a certificate of membership shall be issued to him for

such year. (makes affiliate membership a separate section) *Add Section 6:* 

Section 6. Affiliate Membership for Interns and Residents

An annual affiliate membership shall be granted interns and residents, provided they are fully or partially excused from the payment of county society dues, and provided the request for exemption is transmitted through a component society of the Arkansas Medical Society. The requirement for active membership prior to exemption shall be waived for such affiliate members. This type of member shall be accorded full privileges except that he may not vote or hold office, and he shall receive the Journal of the Arkansas Medical Society. (making affiliate membership possible for interns and residents, rewording of present paragraph of old Section 4)

Add Section 7:

Section 7. Military Members

Regular members of the Arkansas Medical Society who are in the service of the armed forces of the United States, not as career officers, may be classified as military members, and carried on the rolls of their respective county societies as such. Military members shall have a waiver of dues during the time of service, provided that they are in good standing at the time they entered the armed forces. Military members shall enjoy full membership privileges and certificates of membership shall be issued to them for each year.

Article V of the Constitution

Amend so as to insert the word "treasurer" after the word secretary in line 4 thereof. (makes the treasurer a member of the House of Delegates)

Article VI of the Constitution

Amend so as to insert the words "the two delegates to the American Medical Association" after the word treasurer in line two thereof. (makes the two delegates to A.M.A. members of the Council)

By direction of the Council, the Committee submits the following amendment creating a standing committee on Medicine and Religion by adding to Chapter VIII of the By-Laws, Section 12, A Committee on Medicine and Religion.

Add: "Section 12:

"The Committee on Medicine and Religion shall work to create and enhance communication between the physician and the clergyman which will lead to the most effective care and treatment of the patient in which both are interested. It shall study the areas in which there is or may be continuing correlation involving medicine and religion."

### FIRST COUNCILOR DISTRICT PROFESSIONAL RELATIONS COMMITTEE

R. C. Shanlever, Chairman

As Chairman of the First Councilor District Professional Relations Committee of our Society, I am pleased to report that we reviewed several cases for Medicare only during 1963 and these were settled to the satisfaction of the doctors with no difficulty.

### SECOND COUNCILOR DISTRICT PROFESSIONAL RELATIONS COMMITTEE

M. C. Hawkins, Jr., Chairman

The Second Councilor District, Professional Relations Committee, of the Arkansas Medical Society, has had no controversial problems referred which would require a meeting of the committee.

A decision has been rendered by the chairman on several medical bills referred by the office of the executive secretary.

### FOURTH COUNCILOR DISTRICT PROFESSIONAL RELATIONS COMMITTEE

Louis K. Hundley, Chairman

The Fourth Councilor District Professional Relations Committee has had no complaints against physicians presented to it during the past year.

Committee work has been limited to the professional review of Medicare claims submitted to it.

### SEVENTH COUNCILOR DISTRICT PROFESSIONAL RELATIONS COMMITTEE

C. F. Peters, Chairman

During the year 1963, the Committee processed some twelve or fifteen cases, primarily having to do with the Medicare Fee Claims. One threatened malpractice case was settled by consultation with no suit being brought. All cases were received by the Committee and a final decision reached.

### RELATIONS COMMITTEE

Richard M. Logue, Chairman

The State Professional Relations Committee met at appropriate intervals during 1963 and has reviewed and evaluated 107 medicare files. Each of these evaluations were reported to the Headquarters Office and recommendations have been made concerning charges in question.

The Eighth Councilor District Professional Relations Committee has not been called on for official action in the past year, 1963.

### COMMITTEE ON NATIONAL LEGISLATION

Jae Nortan, Chairman

The Committee on National Legislation of the Arkansas Medical Society was formed last year and the membership is composed of Dr. John Faris, Jonesboro; Dr. Kenneth Duzan, El Dorado, and myself. We have co-opted many others to help us over the state. The function of the committee was to keep abreast of national legislative efforts in the field of medicine, and to channel such information to the Medical Society, and to formulate such programs of education and action as might be indicated.

The committee members attended a legislative conference on the A.M.A. level in Chicago as an indoctrination. Plans were made and accepted by the Council of the Arkansas Medical Society to co-opt many physicians as leaders in legislative activities over our state. This was done. These feaders were called together for a series of training sessions in August, 1963 and October, 1963. Most of the 35 physicians who volunteered their services also took part in the training sessions. The names of these men were placed on a mailing list of the American Medical Association to receive all legislative information. These men, together with others, were designated as Operation Hometown Chairman in their areas. They were asked to seek every opportunity to inform their physician colleagues, the Medical Auxiliary groups, and the organized lay groups in their area concerning the stand of Organized Medicine on National Legislative activities, especially the King-Anderson Bill.

In addition, we alerted the Auxiliary of the Arkansas Medical Society and the Arkansas State Medical Assistants Society and other allied groups, including lay groups, and sought their help in expressing opposition to King-Anderson type of medical legislation. These groups have responded well, alerting and encouraging their members and their officers to help us in this legislative battle.

Many of the physicians who joined us over the state have organized meetings, some of their County Societies, some including their Auxiliaries, and a few including lay leaders. At these meetings the stand of organized medicine as regards the Kerr-Mills law and the King-Anderson Bill have been expressed. There have been lively sessions and have been most helpful.

Much effort has been made to encourage letter writing, not only by physicians over the state, but by their wives and their medical assistants and their friends.

It should be added that the efforts of this committee have been greatly augmented by the initiative and the interest and the zeal of the office of the Arkansas Medical Society. Literally thousands of pamphlets concerning medical legislation have been sent to the various offices of the physicians over the state from our Fort Smith Arkansas Medical Society office. I am indeed grateful to Mr. Schaefer and to his fine office personnel for this initiative and this aid.

The King-Anderson plan for the federal government controlled health care for the aged under the Social Security System is one of the most significant domestic issues confronting the American people. Similar schemes since 1948 have been stalled by an upsurge of public protest. This is more than a medical issue. It affects the economic and political freedom of our country. The hour for decisive action has come. It will come again and again. If we truly believe in a system of medicine that is free of political control over hospital patients or physicians, then we must inform ourselves daily, keep up-to-date on the activities in the field, and we must discuss with our friends and our neighbors and our colleagues our reasons for opposition to such a system of medicine. Please take this opportunity and frequent opportunity to write to your United States Senators and to your Congressmen and tell them how you stand. Ask them to oppose the King-Anderson Bill and to give the Kerr-Mills law and voluntary health insurance a chance to do the job, and to meet what need might be present in this field. This is your responsibility and your privilege, your obligation. No one can do this for you.

### COMMITTEE ON MEDICINE AND RELIGION

Joe Norton, Chairman

The Council of the Arkansas Medical Society has recently appointed a committee on Medicine and Religion, composed of Dr. John Busby of Little Rock, Dr. Jack Kennedy of Arkadelphia, and myself.

This committee has not yet made definite plans for action. We are obtaining material from the Department of Medicine and Religion of the American Medical Association. We intend to digest these materials and to come up with some plan of recommendation to the Council of the Arkansas Medical Society, possibly by the time of the annual meeting in Hot Springs in 1964. At this time, I would like to ask any one of our physician members of Arkansas Medical Society who have interest in this activity to please contact me. The committee certainly should include members of various religious faiths. We also hope to be so organized as to offer help in the planning of County Society programs on Medicine and Religion by the fall of 1964.

### COMMITTEE ON SENIOR MEDICAL DAY

Joe Norton, Chairman

The 10th annual Senior Medical Day, sponsored by the Arkansas Medical Society and the Arkansas Academy of General Practice for seniors of the University of Arkansas Medical School and their wives and invited guests, was held in the Continental Room of the Hotel Marion at 8 p.m., on April 21, 1963. Dr. H. King Wade, Jr., president of the Arkansas Medical Society, was the master of ceremonies.

After a social period and dinner a panel of speakers was presented as follows: Mrs. Hoyt Choate of Little Rock discussed The Doctor's Wife. Dr. Amil Chudy of North Little Rock discussed The Doctor in General Practice. Dr. Thomas E. Townsend of Pine Bluff discussed The Doctor and Organized Medicine. Mr. Kearney Dietz of Little Rock discussed Opportunities in Arkansas. There was a question and answer period following the panel presentation.

The program was relaxed and informal and moved rapidly without any difficulty. The program was received quite well. I am grateful to the panel for the effort expended and pleased with the results of their presentation.

This activity is certainly a worthwhile program of the Medical Society. I do hope that it will be continued. I also would like to recommend that the program be broadened to include junior students, as well as senior students. I know that this would almost double the cost. However, the aim of the program is to not only entertain these students and their wives and guests, but also to try to encourage them in the advantages of general practice, and the advantages of staying in Arkansas for their training and for their practice. I do think it might be well to get these ideas into their minds before their senior year. Quite often, by the time we reach them with this program, plans have already been made for internships in other areas outside our state.

The program for this year will be on Tuesday evening, March 31, 1964, in the Continental Room of the Hotel Marion. Dr. Joe Verser, president of the Arkansas Medical Society, will preside. The program will be presented in conjunction with the Pulaski County Academy of General Practice, and they have obtained as a speaker for the eve-

ning Dr. Carroll Whitten of Louisville, Kentucky, Speaker of the House of Delegates of the American Academy of General Practice. Plans for this particular program are now being completed.

### REPORT OF THE COUNCIL

H. W. Thomas, Chairman

The Council of the Arkansas Medical Society met on Sunday, September 8, 1963, and transacted the following business:

- 1. Approved Executive Committee actions:
  - A. Approved making certain oral surgical procedures by dentists payable under the Arkansas Blue Cross-Blue Shield.
  - B. Approved participation with the Pulaski County Medical Society in an exhibit at the Livestock Show in Little Rock.
  - C. Approved a reduction in medical services under the Kerr-Mills Program necessitated by unforeseen shortage of funds.
  - D. Nominated M. D. McClain to serve on the Committee on Liaison with the Nursing Profession.
  - E. Authorized expenses for the president-elect to attend the A.M.A. Institute in Chicago.
  - F. Voted to suggest to the Board of Directors of Ark-Pac that the Board reorganize itself and reduce the number of members on the Board.
  - G. Reaffirmed its endorsement of Ark-Pac.
  - H. Voted to request individual councilors in each councilor district to visit each county medical society in their district and commend to the county medical society the work of Ark-Pac.
- 2. With regard to proposals of the Annual Session Committee:
  - A. Voted to combine the Cocktail Party and Banquet on Tuesday evening.
  - B. Voted to charge a \$15 registration fee which would include a \$10 ticket for one person for the Cocktail Party and Banquet.
  - C. Approved not scheduling a dance in connection with the banquet.
  - Voted to dispense with the awarding of golf prizes at the banquet,
- 3. Reiterated the importance of each councilor calling on all of the county medical societies in his district and designated the councilor with the greatest tenure of office as the senior councilor with responsibility for seeing that responsibilities assumed by the councilors are carried out.
- 4. Directed that Dr. R. B. Robins' name be submitted to the Board of Trustees of the American Medical Association for re-election to that Board.
- 5. Adopted a resolution commending Ark-Pac to the members of the Medical Society.
- 6. Requested the Garland County Medical Society to sponsor a luncheon in honor of President-elect Welch of the American Medical Association during the National Rural Health Conference held in Hot Springs.
- 7. Voted to co-operate in reactivating the Joint Commission on the Improvement of Patient Care.

- 8. Received and noted with approval the report of examination of Blue Cross-Blue Shield by the State Insurance Commissioner.
- Appointed two representatives to attend a meeting of a committee established by the Atkansas Industrial Association and to co-operate with the aims and activities of the committee.
- Heard a discussion of the San Diego Foundation for Medical Care by Dr. Ellis.
- Asked the Executive Committee to meet with the Welfare Department to see what could be done about inaccurate and unfair reports on the operation of the Kerr-Mills Program.
- 12. Directed the Executive Secretary to write the Arkansas Democrat complimenting them on an editorial on the Kerr-Mills Program.
- 13. Directed the Executive Secretary to investigate the advisability of publicizing correspondence between an official of the Welfare Department and members of the Desha County Medical Society.

The Council met on December 15, 1963, and transacted the following business:

- 1. Directed the chairman to appoint a temporary Committee on Medicine and Religion until the constitution can be amended to establish a permanent committee.
- 2. Approved a report of the Committee on Mental Health which embraced plans for improvement of liaison between the State Hospital and practicing physicians and to encourage the holding of seminars and making available other postgraduate work on psychiatric subjects.
- Directed the Executive Committee to meet with a committee from the Arkansas Pharmaceutical Association to discuss problems to be brought up by the pharmacists.
- 4. Approved a Medical-Legal Institute sponsored by the University and the Arkansas Bar Association.
- 5. Voted to raise rates for the professional notices of clinics and members purchasing space in the Journal of the Arkansas Medical Society other than in the professional directory.
- 6. Decided to request an increase in the Medicare fee for well-baby care from \$10 to \$15.
- 7. Heard discussion of the latest modification of Rule 21 of the Workmen's Compensation Commission and decided to refer the matter to Dr. Cazort's special committee for further negotiation with the Commission.
- 8. Decided to take no action on a proposal for establishment of another student loan fund.
- 9. Voted to ask Dr. Burton to investigate the matter of making two years of practice a prerequisite to take a residency.
- 10. Voted to continue Society membership in the A.M.A. Aces and Deuces.
- H. Voted to make the facilities of the Society headquarters available to the committee which will raise money for the Arkansas Breakfast.
- 12. Approved State Health Department plans for a statewide immunization program to be paid for by federal funds.

- 13. Referred resolutions regarding federal subsidization of Blue Cross-Blue Shield to the Insurance Committee for study and recommendations at the Society's annual meeting.
- 14. Approved a suggestion by Dr. Morris that the Arkansas Joint Council to Improve Health Care of the Aged and the Arkansas State Joint Commission for the Improvement of the Care of the Patient be combined into one organization.
- 15. Voted to take no action on a resolution opposing the sale of the property containing the bath houses in Hot Springs by the federal government,
- 16. Voted to request the Governor to appoint a physician to a special group of Public Health Service personnel to attend a meeting concerning the implementation of the mental health bill recently passed by Congress.

The Council met on February 9, 1964, and transacted the following business:

- 1. Heard a Medical Society representative on the Board of Trustees of Blue Cross-Blue Shield present figures showing that utilization in most categories of coverage was exceeding 100%. It was announced that Blue Cross-Blue Shield premiums would be increased considerably due to the high utilization. The Council voted to request the Medical Society representative to continue to study the problem of increasing premiums to make every effort to reduce the size of increase of premiums on all classes and especially to limit the increase on policies for those over 65 years of age.
- 2. Heard a report of a meeting requested by the Pharmaceutical Association between its Executive Committee and the Executive Committee of the Arkansas Medical Society on the subject of doctor ownership of pharmacies. It was reported that no action was taken on the proposals made by the pharmacists.
- 3. Heard President Verser report on his testimony before the House Ways and Means Committee to oppose the King-Anderson Bill.
- 4. Heard a report on the progress of the reorganization of Ark-Pac. Dr. L. A. Whittaker is the new Board Chairman and Mrs. C. C. Long is the new Secretary-Treasurer.
- 5. Approved payment of expenses for one speaker to an Obstetrics-Gynecology panel scheduled for Tuesday morning during the Annual Session.
- 6. Voted to join the United States Chamber of Commerce.
- 7. Accepted and approved the annual Audit report.
- 8. Voted to approve co-sponsorship of the Medical-Legal Symposium put on by the Arkansas Bar Association,
- Referred the idea of establishing an appropriate memorial for Dr. J. D. Riley to Dr. John Wood for his study and recommendation. It was suggested that the Medical Society introduce a resolution in the State Legislature to rename the Booneville Sanatorium for Dr. Riley.
- 10. Voted to renew the Medicare contract upon approval of the Society's Medicare negotiating committee.
- 11. Heard a request by the State Health Officer that the Medical Society develop a policy on the subject of family planning and voted to refer the subject to the

- Committee on Maternal and Child Welfare for study in co-operation with the State Health Department.
- 12. Voted approval of a planned Speech and Hearing Clinic proposed by the State Health Department.
- 13. Heard the announcement by the President-elect that
- Dr. T. E. Townsend would be the program chairman for the 1965 meeting of the Society.
- 14. Voted to authorize the Executive Committee to select a nominee for the Board of Trustees of Blue Cross-Blue Shield to complete the unexpired term of Dr. John Laurens who had resigned.

### **BUDGET COMMITTEE**

W. R. Brooksher, Chairman

The Budget Committee met on February 15th and approved the following budget for 1964:

INCOME

		INCOME	
Membership Dues		\$ 49,000.00	Does not include 85 for MEFFA
Journal Advertising			
Local	\$ 5,600.00		
National	19,000.00	24,600.00	
Booth Income		5,385.00	
Annual Session Income		5,259.00	
AMA Reimbursement		475.00	
Income from Medicare		$16,\!275.00$	New military hospital at Jacksonville Air Force Base
Miscellaneous and Rosters		125.00	,
Interest on Bonds		2,000.00	
Retirement		229.50	
		\$103,339.50	
		EXPENSES	
Salaries—			
Medicare	\$ 9,636.00		
Journal	8,887.00		
AMS	16,809.50	\$ 35,332,50	\$1,500 less than approved for 1963
Travel and Convention	. 3 (0 30 10 3	9,000.00	a la
Taxes		0,000,000	
Medicare	331.00		
AMS	515.000	846.00	
Retirement Fund	313.000	0.000	
Medicare	873.00		
AMS	3,072.00	3,945.00	One additional employee becomes eligible
Stationery and Printing	3,072.00	3,2 13.00	one additional employee occomes engione
Medicare	325.00		
AMS	900.00	1,225.00	
Office Supplies and Expens		1,225.00	
Medicare	2,409.00		
AMS	1,500.00	3,900.00	
Telephone and Telegraph	1,500.00	3,300.00	
Medicare	400.00		
AMS	1,800.00	2,200.00	
Rent	1,000.00	4,200.00	
Medicare	1,030,00		
AMS	1,106.00	2,136.00	
Postage	1,100.00	2,130.00	
Medicare	750.00		
AMS	3,300.00	4,050.00	
Insurance and Bonds	3,300.00	1,030.00	
Medicare	180.00		
AMS	425.00	605.00	
	425.00	005,00	
Auditing Medicare	475.00		
AMS	300.00	775.00	
Council Expense	500.00	500.00	
Journal Printing and Expe	nee	24,000.09	Includes Society car expense
Journal Filling and Expe	1130	47,000.00	includes society (al expense

Annual Session	7,767.00	
Senior Medical Day	400.00	
Public Relations	500,00	
Dues and Subscriptions	930,00	
Contributions and Gifts	60,00	
Woman's Auxiliary	1,200.00	Increased by Council action
Legal Service	2,500.00	
Special Committees	300,00	
Rural Health	300.00	
Miscellaneous	200.00	
Freight and Express	50.00	
Office Equipment	1,975.00	Painting, new typewriter, automatic stapler, lamps
Refund to Government	1,577.50	1964 payment will eliminate indebtedness to
		Government
	\$105,914.00	
Deficit	\$ 2,574.50	

### **EXECUTIVE SECRETARY'S REPORT**

Mr. Paul C. Schaefer

1963 was a year of increased member participation in Society activities. Two examples of this healthy, developing trend are offered. One, the 106 doctors who volunteered to man the aid station at the State Legislature for the benefit of the legislators. Two, the fine response to headquarter's request to distribute pamphlets opposing King-Anderson legislation. Over 70,000 copies of one piece were sent to doctors on their specific request as a result of one mailing.

The activities of Operation Hometown chairmen who held public meetings to inform the public on social security health legislation exemplify the kind of interest and self-less service to the cause of medicine that has kept it free. The headquarters office wishes to thank all those who respond to suggestions to distribute literature, volunteer for the numerous society projects and otherwise give of themselves for the benefit of the profession.

Reference to the budget will reveal a steady decline in Society income from sources other than dues. Although concerted efforts have been made to improve the situation, the best we have been able to accomplish is a slowing down of the rate of decrease in these other sources of income. With inflation proceeding at an ever faster rate, the headquarters can only continually try to reduce expenses. During 1963 it was believed necessary to accomplish this by reducing some of our activities. Not as many meetings were attended, not as much informational material was purchased, not as many mailings were sent out and the use of first-class postage was forgone (with some misgivings) a good part of the time. As a result of the reduced activity, we were able to reduce the force of clerks and stenographers in the office by one. These and other savings resulted in our finishing the year with income exceeding expenses by a small amount. Whether the savings achieved will, in the long run, be worth the slowing down of the program is a question.

A complicating factor in the situation is the burgeoning program of the American Medical Association. With the increase in funds available to them, the various councils, committees and departments of the national organization have multiplied the meetings at which they expect the state societies to have representatives. The State Society head-

quarters receives a great many more requests from AMA for assistance, information or participation in new programs. The Executive Secretary is subject to a continuous stream of suggestions and pressure by AMA representatives to have the Society take on additional worthy activities and programs.

The Executive Secretary, on behalf of himself, his assistant and staff, wishes to express thanks to the House of Delegates, Council, officers, committees and members for their support and their delegation of authority and responsibility so necessary to the vitality and adaptability of the organization.

### ANNUAL SESSION COMMITTEE

Thomas E. Burraw, Chairman

The convention program arranged by the Annual Session Committee appears in another section of this issue of the Journal.

### ARKANSAS STATE ADVISORY COMMITTEE TO THE SELECTIVE SERVICE SYSTEM

Gerald H. Teasley, Chairman

The Medical Advisory Committee to Selective Service System has not had very much activity insofar as determining the essentiality of physicians and dentists during the year 1964.

A new name has been added to the Committee after the resignation of Dr. John D. Jordan. Dr. James V. Gunn, a dentist in active practice in Little Rock, Arkansas, was appointed to fill the vacancy following Dr. Jordan's resignation.

### REPORT OF THE ARKANSAS STATE MEDICAL BOARD

January 1, 1963-January 1, 1964

The Secretary of The Arkansas State Medical Board makes the following report of the activities of this Board since the last meeting of the Arkansas Medical Society:

The Officers and Members are as follows:

Jeff Baggett, M.D., Chairman

Hugh R. Edwards, M.D., Vice-Chairman
Joe Verser, M.D., Secretary-Treasurer
Garland D. Murphy, Jr., M.D.
Frank M. Burton, M.D.
Wm. A. Snodgrass, Jr., M.D.
H. J. Hall, M.D.
Earle D. McKelvey, M.D.
John F. Guenthner, M.D.

The Board investigated every case of violation of the Medical Practice Act reported to the Secretary during the year. Four court convictions were obtained and six cases are now pending. Three injunctions were issued. The Board revoked the licenses of three physicians.

A yearly financial report of the Board's activities, prepared by Johnson, Freeman & Company, Certified Public Accountants, was sent to and approved by the Council of the Arkansas Medical Society.

Following is a report of the Board's proceedings during the past year:

### Physicians registered for 1963:

Resident	1554
Non-resident	998
Physicians licensed by examination	76
Physicians licensed by reciprocity	43
Physicians certified to other states	80
New Medical Corporations	4
Licenses revoked for non-payment of annual registration fee	25
Licenses suspended for non-payment of annual registration fee	48
Court convictions obtained	4
Cases pending	6
Injunctions issued	3
Physicians placed on probation for violation of Federal Narcotic Act	1
Physicians placed on probation for violation of Federal Barbiturate Act	4
Licenses suspended for violation of Federal Barbiturate Act	1
Licenses revoked	3

### FINANCIAL REPORT

January 1, 1963-Janua	ry 1, 1964	
Cash balance in bank-Jan. 1, 1963	\$ 8,302.27	
Time deposits	14,968.46	23,270.73
RECEIPTS:		
Registration' fees	\$ 7,694.00	
Certification fees	1,176.50	
Reciprocity fees	4,400.00	
Examination fees	4,412.50	
Directories	480.35	
Physical Therapy fees and dues	235.00	
Medical Corporation fees and dues	185.00	
Miscellaneous	329.24	
Interest on time deposits	587.55	19,500.14
Total cash available		\$42,770.87
DISBURSEMENTS:		
Salaries, FICA taxes, Board Members' fees and expenses	\$ 9,841.89	
Attorney's fee, expense and	9 604 59	
investigations	3,694.53	
Dues and expenses to Federation of State Boards of U.S.	400.00	
Office rent, supplies, printing,		
telephone, postage, etc.	2,727.83	
Refund of fees	237.50	
CPA audit	175.00	
Physical Therapy expense	79.00	
Miscellaneous-returned checks, bon-		
box rent, etc.	100.00	17,255.75
Cash balance in bank—Jan. 1, 1964	4,940.11	
Cash on hand	19.00	
Time deposits	20,556.01	25,515.12

\$42,770.87

# MEDICINE IN THE

### Health Department Urges Immunization for All Under 30

At its meeting on December 15th, the Council of the Arkansas Medical Society approved a new State Health Department program for immunizing all persons under 30 years of age against polio, small pox, diphtheria, tetanus, and whooping cough.

Dr. Edgar J. Easley, assistant state health officer, presented the program to the Council. He said \$60,000 in federal funds would be available for the program and anticipated that more would be available later.

The program would take place over a 3-year period, with special emphasis being placed on children under five years of age.

The program is aimed at preventing diseases that would be prevalent during an enemy attack. The Health authorities estimate that in event of an enemy attack 70 percent of the nation's population would suffer some sort of injury that would invite tetanus. Diphtheria would also be a problem in crowded defense shelters.

### THE MONTH IN WASHINGTON

Washington, D.C.—Proposals to provide limited health care for the aged under social security continue to be the most important legislation before Congress so far as the medical profession is concerned.

In his State of the Union message to Congress, President Johnson labeled it "must" legislation and asked for Congressional approval before the end of this summer.

The House Ways and Means Committee late in January wound up hearings on the King-Anderson bill, the Administration's medicare legislation. The hearings had been interrupted by President Kennedy's assassination.

The committee—with a majority of its members believed to still be opposed to such legislation—did not indicate immediately when it would act further on the bill.

In commenting on the State of the Union message, Dr. Edward R. Annis, president of the American Medical Association, said that President Johnson apparently had been grossly misinformed by his advisers on the legislation.

"Medicare would not be an insurance program of health care for the elderly, and workers would not contribute to a fund for their old age," Dr. Annis said.

"Medicare would be strictly a tax program, forcing wage earners to pay a substantial increase in their payroll taxes to finance hospitalization for everyone over 65, including those who are wealthy and millions of others who already are protected with hospital insurance.

"The President has also been misinformed on the cost of such a program. Testimony of the Chief Actuary of the Social Security Administration before the Ways and Means Committee in November shows that every worker earning one hundred dollars or more a week would be forced to pay at least 23 per cent more in payroll taxes to finance this inequitable program.

"Medicare is unnecessary. Private health insurance, now protecting more than 10 million elderly, is available to those who can pay their own way, and the Kerr-Mills Law, already enacted in more than 40 states, can help those who need help."

Other legislative proposals of interest to physicians include:

An amendment to the Keogh law that would remove the present 50 per cent limitation on the amount of income tax deduction a self-employed person can claim on his annual retirement savings. It also removes the \$2,500 or 10 per cent of income limitation on the amount of retirement savings an individual with employees could use for tax deduction purposes. This would be a tremendous boost for the Keogh program and for self-employed persons with retirement savings plans.

Rep. Eugene Keogh (D., N.Y.) and Sen. George

Smathers (D., Fla.) are sponsoring the amendment.

The Internal Revenue Service recently issued a tentative ruling that was a setback to physicians and other professional men planning to band together into corporations for tax purposes. A proposed regulation stated that such professional organizations must have all of the characteristics of a business corporation in order to qualify for corporation tax treatment, which would be virtually impossible for a group of professional men.

The regulation would knock out the so-called Kintner regulations of 1960 under which IRS stated that associations of professional men would be classified for tax purposes as corporations provided certain corporate characteristics were followed and provided that state law authorized establishment of the groups as corporations.

The IRS proposal is not final and will be the subject of hearings at a later date. It appears certain to be the subject of court litigation, if made final.

—A civil defense bill that has passed the House and is before the Senate. It would provide a \$190 million program of grants to hospitals and other non-profit institutions for building fall-out shelters. These shelters could be used as garages, storage areas, etc., in peacetime.

—An Administration proposal to require clearance and approval of new medical devices, which means anything from a new type of forceps to the most complicated radiation device. FDA would rule on the efficacy as well as the safety of such devices, as it does now on new drugs.

-"Humane" treatment of laboratory animals. Most of such bills would require research institutions to provide laboratory animal care conforming to certain fixed federal standards in order to qualify for federal grants.

—An amendment to the medical education law that would forgive part of the repayment of federal loans to students if the young physician settles in a physician-shortage area.

-The American Medical Profession and the U.S. Public Health Service have joined forces in opposing a Senate-passed bill that would deprive PHS of its authority over water pollution control activities. The bill, now before the House Public Works Committee, would set up a separate organization in the HEW Department to

handle this function. The AMA contends that this would subordinate the health aspects of water pollution.

-Appropriations for the National Institutes. Last year Congress cut the NIH budget request by \$12 million in approving \$918 million for NIH. This was the first time in recent years Congress has failed to substantially increase the NIH budget request of the Administration. It indicated that Congress is going to take a closer look at all federal research projects, which total some \$14 billion a year.

The AMA has pledged its aid to a Special House Committee investigating the Federal research effort. The AMA told the committee that medical research spending should not grow to the point where quality is overlooked in favor of quantity.

"Research is an investment in the future," Dr. F.J.L. Blasingame, Executive Vice-President of AMA, said in a letter to the committee. "Properly conducted and supported by prudent expenditures, medical research, providing for his physical and social well-being, is vital to the total health security of man . . .

"Certainly, the effort of your Committee and the review being conducted should prove helpful to the nation. We would like to aid that effect in every way that we can."

President Johnson signed into law a bill authorizing \$95 million over the next three years to help states and local agencies combat air pollution, including that from automotive exhausts and industries.

The new law revised the old air pollution control program and made it permanent. It expands the 1955 program that provided Federal grants for cooperative research under the direction of the Secretary of Health, Education and Welfare. He was given broader authority for such research and directed to recommend remedial actions.

These remedial actions could include Federal suite for abatement of interstate air pollution. The Attorney General also could aid states in such intra-state actions if aid were asked by the governor and other state officials.



### Research Program Concerning Lipid Disorders of Children

St. Jude Hospital is initiating a research program concerning lipid disorders of children.

A limited number of children with the following problems will be accepted for study and care as outpatients or inpatients:

- 1. Severe malnutrition and other nutritional disorders
- 2. Lipoidoses (including Gaucher's disease, Niemann-Picks' disease and lipemia)
- 3. Malabsorption syndromes
- 4. Diabetes mellitus

Only patients referred by licensed physiciaus will be considered. Interested physicians should contact Dr. Paulus Zee by telephone at Area Code 901, 525-8381 or by mail at St. Jude Hospital, 332 N. Lauderdale, P.O. Box 318, Memphis, Tennessee, 38101.

### Conference Held in Temple, Texas

The Twelfth Annual Meeting of the Scott and White Conference in Medicine and Surgery was held February 16, 17, 18, 1964 at Temple, Texas.

### Postgraduate Courses Presented

Postgraduate courses for the month of February included a two-day symposium on Vector-cardiography presented February 24 and 25, 1964 at the University of Kansas Medical Center.

A distinguished guest faculty, all known for their teaching and clinical abilities in this field of medicine were present.



### PERSONAL AND NEWS ITEMS

### Arkansans Invited to Miss America Dinner

A dinner honoring Miss America will be given Sunday evening, June 21, at the Fairmont Hotel in San Francisco before her appearance at the Arkansas breakfast Monday morning, June 22, at the annual meeting of the American Medical Association. All Arkansas physicians and their wives are invited to attend this Dutch-treat dinner, but reservations must be made through Mr. Paul Schaefer, Arkansas Medical Society, Ft. Smith so that preparations may be made to take care of the proper number of people.

The seventh annual Arkansas Medical Society breakfast honoring the officers and members of the House of Delegates of the AMA will be held in the Gold Room of the Fairmont Hotel in San Francisco Monday, June 22, at 7:30 a.m. Around 400 people are expected to attend this affair. The breakfast is financed by voluntary contributions from Arkansas physicians who are requested to send their contributions to Arkansas Medical Society Breakfast Fund, P.O. Box 128,

Camden, Arkansas. Miss America will entertain and former Congressman (Dr.) Walter Judd will be the speaker at the breakfast.

### Thirty-Seventh Annual Spring Congress In Ophthalmology

The Gill Memorial Eye, Ear and Throat Hospital and the Elbyrne G. Gill Eye and Ear Foundation, Roanoke, Virginia, announce the Thirty-Seventh Annual Spring Congress in Ophthalmology to be held April 6, April 8, and April 9, 1964.

### Section of Ophthalmology

The Section of Ophthalmology of the Southern Medical Association announces that the next annual meeting will be held in Memphis, Tennessee, November 16-19, 1964.

Papers are now being accepted up to May 15, 1964, for presentation at the next annual meeting in Memphis, Tennessee. For further information, please communicate with the Secretary,

Dr. George S. Ellis, 812 Maison Blanche Building, New Orleans, Louisiana.

### Dr. Thompson Leaves Gurdon

Dr. A. W. Thompson, who has practiced in Gurdon for a number of years, moved to Shreve-port, Louisiana, for the practice of medicine. His Gurdon office closed December 27th.

### Dr. Bethel Returns to Arkansas

Dr. James Bethel, who has been practicing medicine in Winston-Salem, North Carolina, will take over the office formerly occupied by Dr. Wayne Reynolds in Benton. Prior to moving to North Carolina, Dr. Bethel practiced in Bauxite.

### Dr. Inman Wins Drawing

Dr. Fred Inman was the lucky winner of the Des Arc Junior Chamber of Commerce's recent drawing held in connection with its fund drive. He received a 20-gauge Browning automatic shotgun. Dr. Inman was guest of the Des Arc



Washington, D.C.—Dr. Joe Verser of Harrisburg, Arkansas (right) confers with Rep. E. C. Gathings (D., Ark.). Dr. Verser, president of the Arkansas Medical Society, was in Washington to testify before the House Ways and Means Committee. He supported the Kerr-Mills program of medical care for the aged but opposed administration legislation that would finance such care through social security.

Jaycees at its December meeting. He is in general practice at Carlisle.

#### St. Michael's Staff

Dr. C. G. Smith was elected president of the medical staff of St. Michael's hospital in Texarkana at a meeting in December. Dr. B. G. Floyd was elected vice president and Dr. F. P. Cantrell was elected secretary. The following physicians will serve with the officers on the Executive Committee: Dr. J. W. Harrison, Dr. J. E. Rorie, Dr. H. B. Wren, and Dr. H. H. Short.

### Dr. Dennis Addresses Mental Health Group

Dr. James L. Dennis, professor of pediatrics at the University of Arkansas Medical Center, was speaker at a meeting of the Pulaski County Association for Mental Health in Little Rock in December. Dr. Dennis discussed child abuse and the increasing concern about it by the medical profession.

### Little Rock Orthopedists Address Conway Hospital Staff Meeting

Drs. Horace Murphy and Joe Lester, both of Little Rock, were speakers at the December meeting of the medical staff of the Memorial Hospital in Conway. Both are members of the consulting staff at the hospital. Dr. Robert Taylor of Conway was re-named chief of staff of the hospital; Dr. Keller Lieblong, Conway, vice chief of staff; and Dr. Sam Daniel, Conway, Secretary.

### Dr. Reynolds Enters Specialty Training

Dr. M. Wayne Reynolds, formerly of Benton, has been appointed first-year resident in surgery (otolaryngology) at the University of Missouri Hospital, Columbia, Missouri.

### Dr. Hall Moves Office

Dr. Charles W. Hall of Greenwood closed his downtown office in December and will maintain an office in a newly constructed office room at his residence. Dr. Hall has practiced in Greenwood for many years.

### New Clinic and Pharmacy Opens in Decatur

Open House for the McCollum Clinic and Applegate Pharmacy was held in Decatur in December. Guests making a tour of the clinic noted its spaciousness and excellent facilities for a community of that size. Dr. E. N. McCollum has been in practice in Decatur since 1960.

### Doctors Active in Boy's Club and Boy Scout Work

Dr. Alfred G. Kahn, Jr., Little Rock internist, was elected president of the Little Rock Boy's Club in December. He has served as a member of the Board of Directors of the club since 1949 and has served as vice president and on many committees during that time.

Dr. Joe F. Rushton of Magnolia was elected in December to head the activities of over 5,000 Scouts and Scouters in South Arkansas. Among other officers elected was Dr. H. W. Thomas, of Dermott, who will serve as vice president.

### New Clinic Being Constructed in Melbourne

Work has begun on a clinic building in Melbourne, which will be used as a day clinic in connection with the Lard County Hospital. Dr. Harold Tatum will be in charge of the Clinic.

### **Doctor Joins Searcy Clinic Staff**

The Searcy Clinic has announced that Dr. Lonnie Leonard joined that group the first of the year. Dr. Leonard is a native of Batesville and a graduate of the University of Arkansas School of Medicine.

### Dr. Loveless Moves to Benton

Dr. Donald Loveless, who has practiced in Booneville for several years, has moved to Benton for the practice of medicine. Dr. Loveless graduated from the University of Arkansas School of Medicine in 1954 and interned at Kansas City Hospital before going to Booneville.

### **Doctor Makes Calls the Old Way**

With six inches of snow and the mercury down to three above zero and automobiles slipping and sliding all over the streets in December, Dr. James W. Branch of Hope got out the old one-horse sleigh to make his calls.

### St. Vincent Staff Officers

Dr. James W. Headstream was elected chief of staff of St. Vincent Infirmary for 1964, and Dr. Alfred Kahn, Jr., was named chief-of-staff-elect. Dr. James R. Morrison is staff secretary and the division chiefs are Dr. J. O. Porter, Dr. Curry Bradburn, Dr. A. D. Hall, Dr. Robert Henry, Dr. John Watkins, and Dr. J. D. Wilson.



### Well Known Camden Physician and Surgeon Dies

Dr. E. J. Byrd, 88, well known Camden physician and surgeon, died Christmas Day at the Ouachita County Hospital, following a lengthy illness. He had practiced medicine for 65 years in Ouachita, Calhoun and Dallas Counties.

Dr. Byrd was born near Hampton in a log cabin in 1875, the eldest of seven children. He obtained his education in the Calhoun County Schools and was graduated from Woodberry Normal School. In 1902 he received an M.D. degree from Memphis Hospital Medical College of the University of Tennessee. He obtained a state license in 1903. Dr. Byrd spent five years in educational work and served one summer as deputy sheriff of Calhoun County. He moved his family to Camden in 1941 and was associated with Dr. R. B. Robins for 29 years. He served three terms as state senator of the 12th district, 1953-59. He was active in civic and service clubs also. Dr. Byrd was a past president of the Fifth District Medical Society, past president of the Ouachita County Medical Society, director of Ouachita County Tuberculosis Association, and served on many other medical organizations. In 1955, he received a citation from the Arkansas Medical Society for excellence in public service, and at the end of 50 years of practice, was presented a Golden T. Certificate from the University of Tennessee. Dr. Byrd is survived by his wile, Mrs. Elinor Futrell Byrd; one son, Dr. E. H. Byrd of Leesville, Louisiana; four daughters, and one step son.



Resolution of the Ouachita County Medical Society, January 14, 1964.

WHEREAS, Dr. E. J. Byrd was one of the

oldest and most distinguished members of the Ouachita County Medical Society; and

WHEREAS, Dr. Byrd's contribution to the well-being of many people in Ouachita County, both as a physician and a leading citizen, will be long remembered and appreciated; and

WHEREAS, his death has saddened all of those who knew him,

THEREFORE BE IT RESOLVED, That we pause here at this meeting with respect to his memory and officially adopt this resolution. A copy is to be sent to his family and a copy sent to the Journal of the Arkansas Medical Society for publication. A copy shall also be inserted in the permanent records of the Ouachita County Medical Society.



### PROCEEDINGS OF SOCIETIES

### **Grant County**

The Grant County Medical Society sponsored a county-wide oral polio vaccine program with about 50% of the county population participating in all three clinics. One of the members of the Grant County Society, Dr. Curtis Clark, attended the Regional Meeting of the National Foundation in Dallas, Texas. All key members of the National Foundation Campaign attended the inspiring meeting and heard of the work being done by the Foundation on birth defects and arthritis. The work on polio will, of course, not be neglected.

### Washington County Aids Carroll County Hospital

The Washington County Medical Society has gone on record commending the citizens of Carroll County for their diligent efforts to keep the Carroll County Hospital functioning in the face of financial difficulties and also voted that a donation be sent to the Emergency Fund as a token of their approval of these efforts.

### **Ouachita County**

The Ouachita County Medical Society met at the Camden Hotel in December with members of the dental profession as guests. Dr. Wm. O. Young, a Little Rock psychiatrist and chairman of the State Society's Committee on Mental Health, addressed the group on "The Mental Health Situation in Arkansas".

Dr. B. D. King of Camden was named president of the Ouachita County Society for 1964, Dr. Tom Meek of Camden, president-elect, and Dr. R. B. Robins of Camden was re-elected secretary. This is Dr. Robins' 37th year as secretary of this county society. Dr. Perry Dalton and Dr. Joe Ellis were elected delegate and alternate delegate to the State Convention.

### **Baxter County**

Dr. Maxwell G. Cheney has been named president of the Baxter County Medical Society for 1964. Dr. Ben N. Saltzman was re-elected secretary and Dr. Fred Hargrove was named delegate to the State Society.

### **Baxter County**

At a meeting of the Baxter County Medical Society, Dr. Maxwell G. Cheney was elected president for the coming year.

Dr. Ben N. Saltzman was re-elected secretary and Dr. Fred Hargrove was elected delegate to the Arkansas Medical Society.

Dr. William R. Snow was elected secretary and vice president of the medical staff of the Baxter

General Hospital. Dr. Ben Saltzman continues as president and chief of the medical staff.

Dr. John F. Guenthner was given an ovation for his outstanding service as president of the Baxter County Medical Society for the past two years.

The meeting was held at the Baxter General Hospital. A constitution was approved and presented to the governing board of the hospital.

### Mississippi County

Dr. Jack Webb of Blytheville is the new president of the Mississippi County Medical Society. Dr. J. T. Polk of Keiser will serve as vice-president during 1964 and Dr. Eldon Fairley of Osceola was re-elected secretary.

### **Washington County**

Dr. R. P. Edmondson of Springdale has been elected president of the Washington County Medical Society. Other officers are: Dr. James Patrick of Fayetteville, vice president; Dr. John W. Vinzant, Fayetteville, secretary-treasurer. Drs. Thomas Gray and Wendell Ward were elected as delegates to the State Society convention.

### Ninth Councilor District

The Ninth Councilor District Medical Society met in Fayetteville in December with about fifty physicians and their wives attending. It was decided to hold the next biennial meeting in June in Eureka Springs.

### **Garland County**

Dr. Haynes Jackson was elected president of the Garland County Medical Society at the December meeting of the Society. Other officers are: Dr. W. R. Lee, vice president; Dr. A. J. Yates, secretary-treasurer; Dr. Vernon E. Sammons, Jr., Dr. John Dodson and Dr. Lee were named delegates to the State Society convention. The Society unanimously approved a resolution opposing sale of Bath House Row property, as proposed by the Department of Interior in a bill now before Congress.

### Independence County

The Independence County Medical Society and its Auxiliary held a joint meeting in December for presentation of the film "The One Who Heals". The film highlights the unique relationship between medicine and religion and all ministers in the vicinity were invited to attend the meeting.

### Jefferson County

Dr. S. C. Monroe is the new president of the Jefferson County Medical Society. Dr. A. E. Pol-

### ANSWER-Electrocardiogram of the Month

RATE: 85 RHYTHM: SINUS

PR: .17 sec. QRS: .07 sec. QT: .34 sec.

INTERPRETATION: Market artifact, otherwise within normal limits.

COMMENT: Artifacts due to muscle tremor at times may be gross, slow, repetitive, and be confused with atrial arrhythmias. In this tracing the movement was more marked in the right arm, not being evident in Lead III.

### ANSWER-What is Your Diagnosis

Diagnosis: Ovarian dermoid tumor

X-Ray Features: A right pelvic mass extending across the mid-line is noted. Its wall is faintly delineated by calcium. There are tooth-like calcified structures within the mass.

Approximately one-third of all dermoid cysts of the ovary contain some calcium, usually in a tooth attached to one wall of the cyst. In this particular tumor a well developed incisor tooth was found as well as two other less well developed tooth structures.

lard is president-elect of the Jefferson County Society, Dr. J. Richard Pierce, Jr., is vice president and Dr. A. D. Tisdale is secretary-treasurer.

Dr. W. R. Meredith was elected president of the Jefferson Hospital Staff. To serve with him at the hospital are Dr. Calvin R. Simmons, vice president, and Dr. R. H. Flowers, secretarytreasurer.

### Pulaski County

Dr. Elvin Shuffield was elevated to the presidency of the Pulaski County Medical Society at its December meeting. Dr. Joseph D. Calhoun was elected vice president and Dr. William Payton Kolb was selected president-elect. The new secretary is Dr. Guy Farris. Dr. William S. Orr, Jr., is the current treasurer and Dr. James Morrison is treasurer-elect.



St. Francis County Medical Society announces that DR. WILLIAM FLOYD HAYDEN has been added to its roster of membership. Born at Bentonville, Arkansas, he received his premedical education from Hendrix College at Conway, Arkansas. In 1961, his M.D. degree was received from the University of Arkansas School of Medicine. Dr. Hayden's office is at 1740 Lindauer Road in Forrest City, Arkansas. He is a general practitioner.

DR. W. GERALD FOWLER is a new member of the Washington County Medical Society. A native of Hot Springs, Arkansas and his preliminary education was obtained from the University of Arkansas. In 1961, his M.D. degree was received from the University of Arkansas School of Medicine. Dr. Fowler is a general practitioner with his office in Huntsville, Arkansas.

A new member of Washington County Medical Society is DR. NANCY A. RABON. A native of Oklahoma, she received her pre-medical education from Oklahoma Baptist University at Shawnee, Oklahoma. Her M.D. degree was received from the University of Oklahoma School of Medicine in 1959. Dr. Rabon has her office in Huntsville. Her specialty is obstetrics and gynecology.

Pulaski County Medical Society announces that DR. B. AINSWORTH KUEHNE is a new member. Born at Gonzales, Texas, he received his preliminary education from the University of Texas. His M.D. degree was received from the University of Texas Medical Branch in 1945. Dr. Kuehne's specialty is psychiatry and his office is located at 601 North University Avenue in Little Rock, Arkansas.



### **BOOK REVIEWS**

FLUID AND ELECTROLYTES IN PRACTICE, Third Edition, by Harry Statland, M.D., Associate Clinical Professor of Medicine, University of Kansas School of Medicine; Senior Attending Physician, Menorah Medical Center, Kansas City, Missouri, pp. 329, published by J. B. Lippincott Company, Philadelphia, Pa. and Montreal, Canada, 1963.

This textbook concerns itself, as the title indicates, with fluid and electrolytes in practice. The book is well written and contains a few diagrams but no pictures. It does not contain any information not already included in other texts on this general subject. The book contains an excellent bibliography and it is well indexed. This book is of value to medical students and to practicing physicians. It is similar to other books in this general field. AK

THE MANAGEMENT OF MEDICAL PRACTICE, by Alan E. Nourse, M.D., and Geoffrey Marks, M.S., Medical Management Consultant, pp. 387, Published by J. B. Lippincott Company, Philadelphia and Montreal, 1963.

This book is a common sense approach to the practice of medicine. It is not filled with any unusual information. On the other hand, it is a fairly short, worthwhile volume. It discusses the Problems of Practice, The Areas of Grievance, Public Relations, etc. There is a discussion of Patient Management, and there is also a generous portion of the book devoted to Office Management, Personnel Planning and Finances. This book is recommended to Medical Students, and house staff. It is not of particular value to the practicing physician, although certain areas of it might be worth reading. AK

### TUBERCULOSIS



### ABSTRACTS

Sponsored by Arkansas Tuberculosis Association

### SPONTANEOUS ALVEOLAR RUPTURE AT BIRTH

Pneumothorax may occur with the first few breaths of life, presumably due to aspiration of foreign material. Although many infants recover spontaneously, some may require special measures—oxygen breathing or prompt aspiration.

Spontaneous pneumothorax is more common in the newborn period than in any other time of childhood. Since it is one of the few treatable causes of respiratory difficulty in the early days of life, the predisposing factors, clinical findings, and rationale of therapy should be understood.

Of 15 infants with the diagnosis of spontaneous pneumothorax seen in this hospital from 1955 to mid-1962, only two were less than 2.5 kilograms birth weight. Four infants had gestational ages of 42 weeks or more.

In seven of the 15 infants the signs of pneumothorax were clearly evident in the delivery room, which suggests that the collapse occurred with the first few breaths. Three of the seven were meconium stained. The remaining eight infants were symptomatic within the first 24 hours of life and two of these were meconium stained.

### CHEST X-RAYS TAKEN

The possibility of aspiration of blood or meconium as a predisposing event was clear in eight of the 15 infants, and the aspiration of mucus could not be ruled out in any infant. Infection was considered possible in two infants who had infiltrates in the lungs after re-expansion of the collapsed lobes.

Chest films were taken to aid in the diagnosis of all the infants. In only three was the diagnosis strongly suspected before the films were available. Irritability and restlessness were often present. Periodic breathing occurred with large pneumothoraces, and convulsions occurred in one infant who subsequently died.

VICTOR CHERNICK, M.D., and MARY ELLEN AVERY, M.D., Pediatrics, November, 1963.

Four of the 15 infants died, one with tricuspid atresia, one with hyaline membrane disease, and two from their pneumothoraces.

Three of the 11 infants who recovered were treated by water-seal suction applied through a catheter inserted through the chest wall. Deterioration of the infant's condition, characterized by increasing cyanosis, irritability, and periodic apnea, was the indication for aspiration of the air by sustained suction. In the survivors, immediate improvement was apparent after the application of suction. The eight infants who were only mildly ill cleared within hours or up to nine days in incubators. Antibiotics were used when there was any possibility of infection.

### INFLATING THE LUNG

The first breath of the newborn infant poses a unique mechanical problem for two reasons: (1) the development of high transpulmonary pressures and (2) the uneven inflation of the airless lung.

Introduction of air into the airless lung requires the application of high pressures (up to 100 cm.H<sub>2</sub>O) to overcome the viscosity of fluid in the airway and the forces of surface tension, and to stretch the lung parenchyma. As the lung expands the muscles are no longer in a position to maintain a high transpulmonary pressure.

If only one alveolus opens in the initial expansion and the rest of the lung remains at electatic, there is no pressure difference across the unaerated portion of the lung because the pressure is transmitted through the lung tissue. However, the pressure inside the aerated alveolus is at approximately atmospheric pressure and the pressure surrounding the alveolus is below atmospheric pressure. The large pressure difference across this single alveolus is of sufficient magnitude to rupture it if prolonged for a critical period of time.

### INFLATION UNEVEN

The normal airless lung does not inflate evenly. Groups of alveoli rapidly become fully expanded while other areas of the lung remain atelectatic. Inflation of the atelectatic lung *in vitro* clearly demonstrates this serial or sequential opening of ventilatory units.

The pertinent question is why every infant does not have a spontaneous pneumothorax with his first breath. Presumably initial expansion of the lung is rapid and smooth in the vast majority of newborns. Cineroentgenograms of the first breath show that the lungs of the normal newborn inflate promptly. Physiological observations show that a full functional residual capacity is achieved during the first minutes of life, and that the volume of a cry within the first 18 minutes of life is about 77 per cent of that on the third day of life. Once expanded, an alveolus rarely ruptures in a normal lung. This is largely because of the inability of the diaphragm and chest wall to create transpulmonary pressures high enough to rupture the lung.

If there is obstruction to portions of the atelectatic lung this might lead to a prolongation of high pressures across aerated alveoli and could lead to their rupture.

### DEATHS PREVENTABLE

Deaths from penumothorax in the absence of serious underlying disease should be preventable. Once it is known that a pneumothorax or a pneumomediastinum is present, the infant should be on special observation, with pulse and respirations recorded every 15 minutes because of the

rapidity with which tension phenomena may develop. Early and frequent small feedings may be useful in preventing vigorous crying. Limited numbers of observers carrying out physical examinations may prevent the one hard cry which produces the tension phenomenon. The precaution of a No. 18 needle, syringe, and three-day stopcock by the bedside, and frequent observations seem justified for all infants with pneumothorax or pneumomediastinum.

Any sudden change in vital signs should alert the physician to the possibility of air under tension, and if there is deterioration in the clinical status, needle aspirations should be done. Continuous drainage is indicated when pleural pressure is positive.

Some babies have a pneumomediastinum or pneumothorax which is not in communication with the airway, or under pressure. However, the size of the loculated pocket of gas does interfere with respiratory exchange. In this situation 100 per cent oxygen inhalation can be utilized to hasten the absorption of gas from the pocket. Prolonged exposure to oxygen would, of course, be contraindicated in the premature infant unless cyanosis were present. It must be remembered, too, that the use of oxygen for a prolonged period of time enhances the production of atelectasis for the same reason it enhances the rate of removal of loculated gas if the patient does not take a deep breath periodically.



### Sakurai Injectable Silicone Formula

H. D. Kagan, Arch Otolaryug 78:663 (Nov) 1963

A preliminary report of the clinical evaluation of silicone 200 fluid with 1% unsaturated fatty acids added (Sakurai formula) is discussed. A series of 268 cases is reported, with approximately 3,300 injections given without incidence of serious side effects. Preliminary human tissue studies with needle biopsies are in progress, and results of preliminary animal tissue studies are favorable. Other aspects of the problem are analyzed, and it is concluded that most side effects from the use of the preparation, as well as results below aver-

age, are due to faulty judgment and technique of the operator, rather than to the material.

Effects of Heavy High Energy Charged Particles: III. In Vivo Activation in Mice of C<sup>12</sup>, N<sup>14</sup>, and O<sup>16</sup> by Bombardment with 2 bev Protons

S. W. Lippincott et al, Arch Path 76:537 (Nov) 1963

Bombardment of mice with protons of 2 bev energy produces the short-lived radionuclides of carbon, nitrogen, and oxygen. The gamma emission from decay of these isotopes (positron emission) can be measured and serves as a quantitative measure of total proton dose.

### **EXHIBITOR "SHOP TALK"**

# Technical Exhibits At Medical Meetings

The medical exhibitor, if he expects success, must know his doctors well. Their temperaments cover a spectrum from the archly independent and often innovative individualist to the highly conservative individual. It is up to the exhibitor to understand that different types of physicians "behave" in different ways. Directly to the point: it is basic knowledge for an exhibitor that a physician with a conservative bent is more drawn to modical meetings—both local and out-of-town—than his highly individualistic colleague.

The task of the exhibitor then becomes to tailor his medical meeting presentations to the taste of conservative physicians. Exhibits must offer practical information which doctors can use in daily practice. This does not mean that an exhibitor should engage in a private contest to see how many samples and pieces of literature he can hand out. Such a practice offends good taste and invites legitimate criticism.

A company representative attending a booth at a medical meeting should understand clearly why he is there. His single job is "doctor relations"... the cultivation of good will and better understanding for his company. To best achieve this, of course, he should think in terms of supplying doctors with genuinely useful information.

Under these circumstances, what happens to salesmanship? Does salesmanship have a role in a medical exhibition? Of course it does. It is hardly a secret that every company exhibiting at a medical convention would like to see its efforts crowned with increased sales. Yet this does not mean that it is permissible to turn an exhibit into a soapbox for huckstering.

A would-be medical exhibitor can take this cue, however, from the successful salesman. Such a salesman makes it a cardinal rule to do more than describe the merits of the particular product he has to offer; he also works to convince the prospective buyer that he is his ally, genuinely interested in the buyer's well being. This second activity of a good salesman is the main function of a medical exhibit. The job of a medical exhibit is to demonstrate that the company concerned is actually interested in helping the doctor and, indirectly, in helping those persons the doctor serves.

Discussed in such terms, the medical exhibit might, at first, seem a hypocritical and callous device for generating sales. It is not. The successful exhibit must—first and foremost—incorporate a worthwhile message. If it is sincere, if it is honest and if it is interesting, physicians will notice. The benefts to the company from such an exhibit can be very real, even though they are indirect.

Exhibitors planning for a medical convention will do well to keep in mind their role vis-a-vis the physician. Whereas company representatives who call on physicians are guests in a doctor's office, the exhibitor is host when the doctor comes to call. It is no courtesy to subject physicians to a repetition of material previously presented by detailmen.

A good exhibit, in the final analysis, is one which helps a physician practice better medicine. One criterion singles out the exhibitor who knows his business; physicians identify his company as one which works conscientiously in their interest.

By D. M. Robertson, Services Manager, Professional Relations, Merck, Sharp and Dohme, Division of Merck & Co., Inc., West Point, Pennsylvania.



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April, 1964

# THE OURNAL OF THE Arkansas MEDICAL SOCIETY

Vol. 60 No. 11

FORT SMITH, ARKANSAS

88TH ANNUAL SESSION ARKANSAS MEDICAL SOCIETY HOT SPRINGS, ARKANSAS, MAY 3-6, 1964

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\*Roseman, E.: Neurology 11:912, 1961.



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# A VOLUNTARY INSURANCE MEDICARE PLAN

Dale Alford, M.D., F.A.C.S., F.I.C.S.\*

115 E. Capitol, Little Rock, Arkonsas

Mr. Chairman, Members of the Ways and Means Committee:

Before I launch into the subject at hand. Mr. Chairman, may I take this opportunity of expressing to you and my former colleagues in the House my sincere appreciation and genuine pleasure you afford me in the opportunity to be with you today and express my ideas on a difficult subject, and certainly a most controversial one. With your indulgence I also wish to take advantage of this opportunity to place in the record an opinion of mine that is contrary to that of a few editorial writers of today. I disagree very pointedly with the opinion that this Congress has been a "Do Nothing" Congress. I can certainly say this with much more freedom of expression than can you Members who are serving in the 88th Congress. In my humble opinion it is the duty of the Legislative Branch of our National Government to oppose ideas that are expressed by the Executive or Judicial Branch when those ideas are contrary to the wishes of the people whom you represent. Since I am a surgeon by profession I would like to use here an old expression that was given to me in my very early days as a student by one of the really great surgeons of that day, and that is, "It is the good surgeon who knows when not to operate, rather than the one who is too ready to operate." To paraphrase this may I say, it is the good member of Congress who knows when to reject legislation rather than to be too responsive to rush it through committee and onto the floor of the House where tempers and emotions have no place but, rather, where responsible men can arrive at responsible conclusions for the welfare of the people of our nation. Attempts by any individual or group to discredit the Legislative Branch of our government is an act which encroaches dangerously close to being anti-American.

Obviously I am here today in opposition to the Bill proposed by your distinguished Member from California, Mr. King. My reasons for being here in opposition may be quite different to many other individuals. I am in agreement with Mr. King in the worthy cause of meeting the health needs of the wonderful old people of our country. However, in my opinion, I have a proposal which I submit to your Committee, Mr. Chairman, will meet all the health needs of our elderly people much more effectively and at much less cost to the government, and without endangering the Social Security Program now in effect. I first made this proposal in 1958. Since retiring from the House of Representatives, obviously I do not have adequate statistics available to me to give a detailed description of what my proposal will or will not do in a specific number of dollars and cents. Therefore, I am submitting this idea to your distinguished Committee so that you may commandeer the services of the finest minds, statisticians, actuaries, health insurance experts and electronic computers to bring forth the right answers along the lines which I shall presently describe.

Mr. Chairman, I propose a National Voluntary Insurance Medicare Plan, which hereinafter, for abbreviation we may refer to as the V.I.M. Medicare Plan versus the compulsory Social Security Medicare Plan, which for abbreviation we may refer to as the C.S.S. Medicare Plan. The V.I.M. Plan is a system whereby the individual will prepay a premium for total health insurance throughout his lifetime and the premium for this total health insurance will be completely deducted or subtracted from his Federal Income Tax Bill. Under the V.I.M. Plan, when the worker reaches 65 years of age he will no longer pay a premium but will have total health benefits at no further charge for the rest of his life. I propose that this be done through private insurance companies and the capital funds of said companies, if necessary,

<sup>\*</sup>Former Member of Congress, Presented before the Ways and Means Committee, United States House of Representatives, on January 24, 1964.

may be borrowed from the Federal Government under the V.I.M. Plan, at no interest charge, until such time as the capital funds of the private insurance companies will be actuarially sound and then under this new law will be repaid to the Federal Treasury under regulations that will be written by this Committee. In the case of an individual who has no income and is now on the Public Welfare rolls, it is proposed that from the various Federal and State Welfare programs will be paid the health insurance premiums of such individuals. This completely eliminates the means test, for the only credentials under the V.I.M. Plan that will be required of any individual will be a health insurance card, properly identified and serialized under the supervision of the Federal Government through the V.I.M. Plan. In the event that an individual has hidden assets of adequate income to enroll in the V.I.M. Plan but refuses to do so, as is his guaranteed freedom under the American system, then, of course, he and he alone must be personally responsible for his health care from his own assets. Obviously in cases of emergency, all of us are socially committed to take care of such exigencies should they arise. This system insures all people of America from the cradle to the grave of adequate health care. It preserves the freedom of choice of physicians and hospitals. It preserves the private enterprise system for that great segment of the economy associated with the insurance industry. It preserves for private enterprise the third largest industry in America today, The Hospital Center.

Under the V.I.M. Plan, with the incentive of an income tax reduction which will be felt immediately by every family budget in the 50 states there can be no question but that the vast majority of all workers and bread winners would subscribe immediately. This plan then envisions that each individual would carry on his person at all times an insurance card guaranteeing immediate care by all recognized hospitals and members of the various health professions. This plan will be readily acceptable by all senior citizens groups because it would take care of their health needs 100% across the board and provide for them freedom of choice in doing so in the declining, golden years of their lives. There will be no means test objection in this plan, for all that would be presented to the various health services would be the properly certified insurance card. There can be no objection by the various private health practitioners and private hospitals for this system preserves the freedom of choice for both doctor and hospital, so long as their standards meet the qualifications that will, of necessity, have to be defined by Federal legislation and regulation.

Of course, such a plan is so vast it shocks your imagination. The cost will not be staggering as you might think at first appraisal of such a system for the premiums of those able to pay will definitely amount to a tremendous sum for the maintenance of good health, both physically and financially. Such a system entails a tax reduction to the taxpayer as an incentive to pay an actuarially sound health insurance premium. Such a plan, of course, will have to be worked out by a study led by this Committee to include your tax experts, representatives of the various health insurance associations and/or consultants, representatives of the various health professions and the American Hospital Association and others.

Certainly with this type of program in effect the burden of medical and hospital care now in existence through various government agencies will be definitely lessened. For example, a veteran in a small town with non-service connected illness would not be seeking admission to the Veterans Administration Hospital since, through this system he would have adequate medical and hospital care in his own community. This system would be a vast improvement in the health and hospital needs of the dependents of the various military services. This has reference to those dependents now being hospitalized at government expense. For the sake of emphasis, I should repeat at this point that the plan includes all the dependents of every worker who subscribes to the V.I.M. Plan.

In such a plan, it goes without saying, that the Federal Government would have to be in the position of an umpire, with regulations relative to the amount and degree of hospital care given under the plan of each private insurance company. The fees and drug and hospital pay scale could be operated on a basis similar to that which is now approached under standard voluntary insurance plans.

The V.I.M. Plan would provide all the health care for all the old people of the United States, whereas the C.S.S. Plan would provide only for those on Social Security.

The V.I.M. Plan would be voluntary whereas

the C.S.S. Plan is compulsory, a system which is repulsive to the tradition of freedom of choice enjoyed since the inception of our republic. The V.I.M. Plan would not endanger the present social security system whereas the proposed C.S.S. Plan would easily disrupt the present program financed by Social Security taxes. The V.I.M. Plan proposes that doctor bills, and drugs and certain prosthetics be paid, whereas the C.S.S. Plan would provide for the care of only a small segment of our population. The V.I.M. Plan would be a reduction in taxes to the taxpayers of this country, whereas the C.S.S. King-Anderson plan would increase the taxes through Social Security to a staggering degree. The V.I.M. Plan would be studied to such a degree by the experts previously outlined here that the members of this Committee would be able to clearly understand the possible reduction of taxes that would be paid into the Federal Treasury otherwise. The V.I.M. Plan would make available to the average wage earner a security and extra dollars in his pocket that he has never known before, whereas the young wage earner of this country, under the C.S.S. King-Anderson plan would be receiving no benefits for himself but paying for the health needs of a smaller segment of the population. The V.I.M. Plan proposes to definitely take care of all the health and hospital needs of the aging population of all the 50 states of these United States.

Individuals too poor to participate or those on welfare rolls would have premiums paid for from a pool. The pool, backed at first by Federal tax money, eventually would be paid back by private insurance companies as their capital funds grow. If we can develop this plan for 190 million people, as we grow in population, then various private insurance funds will grow. We will be building a reserve so that you can readily foresee that the plan is workable so that when the average worker reaches 65 years of age he would continue to have all the benefits of such a health insurance program but would no longer be required to pay his health insurance premium after the age of 65. This voluntary insurance medicare plan which we refer to as V.I.M., would embrace the whole picture of health care from the newborn to the centenarian. There would be no discrimination whatsoever. You are the leaders who have the armamentarium at your fingertips who can make such a voluntary plan actuarially sound. The proposal just described, of course, would have to be studied thoroughly from every detail as previously outlined. The health needs of this nation would be met for all time to come and if there is that individual who complains of the staggering cost to the federal treasury, which surely would be few, that individual must be reminded that the ones who would be receiving the rewards from the federal reduction are those who pay the federal tax. We are now considering eleven billions of dollars in tax reduction. That is a worthy aim for our great Government. However, in all sincerity, I plead that such a study be made of some type of proposal as this described by me, and then you and I will see a reduction in taxes that will not only put dollars in the pockets of the average worker of this country, but will secure for all time the health needs of the breadwinner as well as all of his dependents, and it will settle the controversy about care of old age so long as this republic is in existence.

As far-reaching as such a scheme may seem, it is worthy of our serious and studious consideration.

If this type of Voluntary Insurance Medicare Plan were to be implemented, it would (1) preserve the American concept of our private doctor-patient relationship; (2) preserve the world's highest calibre of medical care; (3) provide for a tax reduction plan that would have a two-fold financial benefit, i.e., dollars in the average citizen's pocket and guaranteed life-time medical security; and (4) it would be the greatest weapon in our war against poverty.

In conclusion, the V.I.M. Plan is ideal for workers young and old, workable for doctors of every kind, and what the doctor ordered as a practical, palatable potion for a previously political problem.

A plan of treatment has been suggested for the health needs of the nation. For the sake of all of us, I respectfully ask this Committee to consider it.

Thank you.

# CURRENT CONCEPTS IN THE RECOGNITION AND MANAGEMENT OF DIABETES MELLITUS\*

George K. Mitchell

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Recent advancements in the field of diabetes have not been as startling as those made in the study of other endocrine disorders. On the other hand, no other endocrine disease can match the incidence and diverse effects on the general population as does diabetes. It has been estimated that one out of every 20 patients encountered in a general medical practice either has the disease or is a potential diabetic. Stated another way, the potential and unrecognized diabetics comprise  $\frac{4\%}{100}$  of our population in comparison to a 1%incidence of patients known to have the disease. These statistics, even though partially speculative, refer to a sizable segment of our population with a treatable disease which has not been diagnosed. Earlier identification of these unrecognized diabetics would not only improve our understanding of the disease but would give the physician an opportunity to institute measures which would perhaps prevent or blunt the development of complications.

There are two categories of "unrecognized" patients. On the one hand there is the relatively asymptomatic individual who lacks any of the usual clinical features of frank diabetes but has abnormal glucose tolerance when appropriately tested. The term "prediabetes" has been applied to this category. Secondly, there are patients who present with various diabetic complications as the first sign of their disease. Abnormal carbohydrate metabolism may not be evident in these individuals short of a standard glucose tolerance test. These patients are more than latent or "prediabetic." They illustrate the lar reaching or "polydiabetic" effects which may be manifested in the absence of classical symptoms (polyuria, polydipsia, polyphagia). It is clinically and semantically more convenient than to review these unrecognized diabetics as either asymptomatic (prediabetic) or symptomatic (polydiabetic) individuals.

#### The Unrecognized Asymptomatic Diabetic

Asymptomatic individuals are suspicioned usually because of obesity, family history and/or cer-

\*Presented before the General Session of the Arkansas Medical Society, April 22, 1963.

tain aspects of childbearing. Obesity is a well known accompaniment of adult diabetes and is present in approximately 85% of adult diabetics at the time of diagnosis. The association of obesity with a family history of the disease should prompt investigation for the presence of diabetes, particularly if the family history is positive among first degree relatives. With regard to heredity, predisposition for diabetes is based largely on the hypothesis that diabetics are homozygous for a recessive gene. The genotype for diabetes would be d and D would be the normal allel. Accordingly, dd would represent a diabetic or potential diabetic, DD would represent no diabetic trait, and Dd would represent a carrier for diabetes. The offspring of various matings could then be predicted. For example, the union of a carrier (Dd) and a known or potential diabetic (dd) would result in two diabetics and two carriers. The union of two unsuspecting carriers would result in one normal, two carriers, and a diabetic. The latter example probably accounts for the instances of isolated cases of diabetes in certain family groups.

In addition to obesity and heredity, pregnancy may allow a glimpse of the unsuspected diabetic mother and the combination is also associated with a number of fetal complications. In fact, of all gestational complications, the fetus is most often and most seriously affected. The essential complication concerns an elevated perinatal mortality rate expressed as frequent spontaneous abortion, stillbirths, and neonatal deaths. Fetal wastage is also affected by excessive birth weights and a higher incidence of congenital abnormalities. The effect on the mother may be very subtle, but the appearance of frank diabetes is often accelerated with increasing parity. In addition, all gestational complications may precede the development of overt diabetes by several years. Obviously a review of the obstetrical history of an asymptomatic non-gravid individual might prompt appropriate testing and follow-up for the detection of diabetes.

From a practical standpoint, the three major predisposing factors for the development of diabe-

tes (heredity, obesity, and parity) may occur singly or in combination in an unrecognized asymptomatic individual. Therefore, appropriate testing for the diagnosis of diabetes should be instituted when the following situations are encountered:

- 1. Obesity with a family history of diabetes in lirst degree relatives
- 2. Obesity with any bilateral family history of diabetes
- 3. Combination of obesity and/or diabetic lamily history of any kind with
  - a) two or more spontaneous abortions
  - b) one or more stillbirths
  - c) history of any birth weight exceeding nine pounds.

### The Unrecognized Symptomatic Diabetic

The unrecognized diabetic with classical symptoms of polyuria, polydipsia, and polyphagia alone is excluded from this category. Instead, attention is directed toward those individuals who seek medical attention for a variety of complaints which are initially seemingly unrelated to a manilest abnormality in glucose tolerance. Indeed, some of these patients have as their initial complaint some clinical entity which would ordinarily be considered a complication of diabetes. It is reasonably safe to say now that almost any syndrome made up of any diabetic complication may appear long before the abnormality of carbohydrate metabolism becomes apparent. Now, what would seemingly be a reversal in the natural history of a disease turns out to be a source of many disagreeable and perplexing clinical problems. The following list of disorders may be associated with unrecognized diabetes. Evaluation of glucose tolerance should be made in such patients if obesity and/or heredity are factors. If the problem is particularly perplexing or profound, appropriate testing should be performed even in absence of a positive family history.

- Neurological complications
   Peripheral neuropathies, absent ankle jerks, extraocular muscle palsies, impotence, diarrhea, syncope, cord bladder and foot ulcerations.
- 2. Eye complications Glaucoma, cataracts, failing vision with retinopathy.
- 3. Vascular complications
  Gangrene; angina or myocardial infarction
  in Iemales (particularly when normotensive
  and premenopausal): cerebrovascular acci-

dents; transient hyperglycemia and glucosuria.

#### Diagnosis

It is certainly not exceptional to find a negative test for sugar in the urine when screening the unrecognized diabetic whether he be asymptomatic or symptomatic. Furthermore, the fasting blood sugar is commonly normal. For this reason, either a two hour postprandial blood sugar (PBS) or a standard glucose tolerance test must be performed to rule out diabetes or establish the diagnosis. A two hour PBS is a very convenient and useful test if properly performed and interpreted. The test meal should contain approximately 100 grams of carbohydrate. In order to be diagnostic of diabetes mellitus, the two hour specimen should be greater than 160 mg. % (Folin Wu) or 140 mg.  $\frac{\sigma'}{\sigma}$  (Somogyi or true blood sugar method). If the standard glucose tolerance test is done, diabetes is present when the blood sugar exceeds 160 mg.  $\frac{9}{10}$ , 140 mg.  $\frac{97}{10}$ , and 120 mg.  $\frac{97}{10}$  at 1 hour,  $\frac{1}{2}$  hour and 2 hours respectively (true blood sugar method). The diet on the three days preceding the test should contain at least 300 grams of carbohydrate per day. Testing a prediabetic individual can occasionally create problems in interpretation and defining abnormal glucose tolerance. In an attempt to resolve such problems, tests using cortisone and prednisone have been proposed to "stress" the suspected subjects. These tests were originally felt to demonstrate mild diabetes in individuals who previously had shown a normal response to a standard glucose tolerance test. At the present time, and after much debate, it appears that these tests are of very little practical value in a routine program of diabetic detection.

#### Management

Under the circumstances a thorough discussion of diabetic management is neither intended nor is it possible. In general, physicians are familiar with accepted methods of treating the diabetic. Exploiting these methods, however, for better control is a highly variable matter and for this reason certain aspects of management will be discussed.

Education. Any type of patient-doctor relationship which approaches a successful management of any disorder depends upon mutual cooperation. There is no other area in the practice of medicine where this simple truth is more evident than in the care of a diabetic. To begin with, it is a chronic, incurable but controllable disease.

In the newly discovered diabetic, the initial reaction may be a mixture of fright and disbelief. Both reactions tend to breed either rejection or an unrealistic attitude toward the disease. On the other hand, what might appear to be an initial "healthy" response might soon give away to depression and too much dependence upon the physician. The boundaries of the "happy medium" are unknown but a reasonable approach to a healthy attitude begins with a certain amount of reliable information. By reliable, this would exclude over-the-fence misquotes and loose journalism in some lay periodicals. The most sensible approach is a candid discussion between the doctor and the patient based on current knowledge. Numerous pamphlets, manuals, and texts are available for reference and a wide variety of books and pamphlets can be obtained from the American Diabetes Association.\*

Recently the American Diabetes Association has given special attention to the problem of systematic education and supervision of patients with diabetes. As a result, a nine point checklist has been advocated. Generally speaking, this checklist of material important in diabetic education contains no new items. However, reference to this list with each new diabetic (and review with the "old" diabetic) would result in a more uniform educational program and, hopefully, better total care.

Diet. The diet of a diabetic individual probably represents the biggest stumbling block in treatment. The reasons for this are both practical and psychological. From a practical standpoint, diet instruction involves a good deal of time and interest. In addition there are, at times, socioeconomic problems which are seemingly overwhelming and discourages the best attempts at a reasonable diet. As an aid in developing a workable and consistent diet, the American Diabetes Association has available a number of informative pamphlets including a booklet on meal planning and exchange lists. Exchange lists, of course, have helped to abolish the necessity for weighing foods. Also available from the American Diabetes Association is A Cookbook For Diabetics. Playing cards designed to familiarize patients with food exchanges are available to diabetics in England.

Methods for calculating a diabetic diet vary widely. There is, however, a fairly uniform feeling about the essentials of diet planning. The patient's ideal weight can be obtained either from height and weight tables or can be estimated. For example, in males, 110 pounds is allowed for 5 feet in height, and 5½ pounds is counted for each additional inch. In females, 100 pounds is allowed for 5 feet in height and 5 pounds is counted for each additional inch. Accordingly, the ideal weight for a male and a female 5 feet 6 inches tall would be 143 and 130 pounds respectively. Having calculated the ideal weight, the total daily caloric intake necessary for good nutrition is then estimated.

Basal Diet					
Age		Calories per Pound			
15-20		14			
20-50		12			
Over	50	10			

An additional 30% of this calculation would be necessary for people with ordinary light activity. With heavier activity, the diet may need to be increased from 50-100%. The caloric intake is then divided according to the requirements for carbohydrates, proteins and fat. There are numerous methods and shortcuts to arrive at a definite number of grams needed daily for each foodstuff for adequate nutrition. In essence, expressed as calories, the diets should contain 40% carbohydrate, 40% fat and 20% protein. Having arrived at a suitable diet, applying the principles of good nutrition on an everyday basis becomes an essential exercise.

There are a variety of special foods available to diabetics. Most important among these foods are the water packed canned and frozen foods. Approval of other "special foods" should be made only after inspecting the label. For example, so called diabetic candy usually contains hidden sources of carbohydrate. The subject of alcoholic beverages is treated differently by various authors. In theory, these items could serve as part of a carbohydrate quota which could be accounted for through food exchanges. The major difficulty is that high calorie eating is often associated with drinking not to mention the various mixes which are used. Furthermore, the "exchange list" is probably not foremost in a patient's mind during a zippy social hour.

Urine Testing. Urine testing is a valuable way of checking a patient's control. There are certain limitations, however. It is important that a false sense of security not be established when the urine is negative for glucose. Many individuals, partic-

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ularly older diabetics and those with renal impairment, may have considerable hyperglycemia without spilling sugar in the urine. It is necessary in these individuals to perform frequent blood sugar determinations to be certain of their control. A system of checking the urine should be recommended to all diabetics regardless of their consistency or degree of control. The urine should be checked at least once and preferably twice daily and should be checked four times daily on two days of the week. The type of testing material used is a matter of choice as there are no appreciable differences except in a few instances. For example, it is well known that the Clinitest is not specific for glucose and may, therefore, give a positive reaction for other sugars such as lactose during pregnancy. Other tests such as Tes-tape Clinistix are specific for glucose. The Clinistix test is felt to be much more sensitive than Clinitest but is not as specific for judging the degree of sugar spill.

Insulin and Orally Administered Hypoglycemic Drugs. Any sort of review in this category would place more emphasis on the current concepts regarding the use of oral hypoglycemic agents. This in no way should minimize the importance of insulin in maintaining good diabetic control as it continues to be the cheapest and most reliable hypoglycemic agent available. Nevertheless, a goodly portion of the diabetic population can be controlled by either diet alone or with the addition of one of the oral hypoglycemic agents in present use. Of the three currently available oral hypoglycemic agents, Tołbutamide (Orinase) and Chlorpropomide (Diabinese) exert their effect by increasing endogenous insulin production. The mechanism of action of phenformin (DBI) is not totally clear but it, too, has proved to be an effective hypoglycemic agent.

One of the largest studies dealing with an oral hypoglycemic agent concerns a five year experience at the Joslin Clinic treating of 2500 patients with Tolbutamide. Approximately 18% were considered primary failures as they did not respond satisfactorily to the drug after a one month trial. It is important to note that in this group there were 104 diabetic children and 143 individuals who had response tests only. The latter group probably contained some individuals who had required more than the average dose of insulin for a prolonged period of time prior to attempted control by Tolbutamide. Of the remaining 1965

cases, control was found to be satisfactory in 66%and unsatisfactory in the remaining 34%. Satisfactory control was divided into good and fair response. Good control (43%) was left to exist if at least  $70^{o+}_{70}$  of the true blood glucose values were 110 mg.  $\frac{\sigma_0}{\sigma_0}$  or lower three or more hours after food; 130 mg. or lower two hours after food and 150 mg. or lower one hour after food. The requirement for fair control (23%) was satisfied when at least  $70^{\circ\circ}_{/0}$  of the true blood glucose values were 130 mg.  $\frac{\sigma_0}{\sigma_0}$  or lower three or more hours after food; 150 mg. % or lower two hours after food and 180 mg. % or lower one hour after food. When these standards were not met, control was termed unsatisfactory, and in this group patients with more than 70% of blood glucose values in the poor range were classified as secondary failures. Secondary failures amounted to 432 cases (22%). A careful review of these individuals revealed that of this total, poor selection accounted for 110 cases, disregard of diet for 68 cases, inadequate dosage for 163 cases, and temporary metabolic stress for 18 cases. Discounting this group, true secondary failure was noted in only 73 individuals (3.7%). Untoward effects were noted in 25 patients (1%). Skin rashes were noted in 12 patients, 9 patients complained of GI symptoms, purpura was noted in 2 individuals and hypoglycemia and jaundice were noted in one patient each. Prior evidence of hepatic disease existed in the individual who developed jaundice.

Several reports have indicated that the use of both tolbutamide (Orinase) and chlorpropamide (Diabenese) will improve diabetic tolerance in young nonobese people with mild diabetes. Using tolbutamide, Fajans and Conn noted that seventeen out of twenty such individuals displayed improved or normal glucose tolerance which has persisted for as long as four years. They postulated that "beta cell decompensation might be preventable" with the early use of sulfonylurea compounds in selected subjects. Further studies are necessary for better definition of these results but a sense of quiet optimism seems reasonable.

The Care of the Insulin Syringe and the Technique of Insulin Injection. These subjects are adequately treated elsewhere. It is unnecessary to emphasize the importance of properly administering insulin with regard to cleanliness and dosage. However, at least one point bears special emphasis. Patients should administer their own insulin except when impaired vision or unsteady

hands might jeopardize accurate dosage. Otherwise, dependence on someone else to give the injection is an immature attitude and in many instances probably symbolizes a rejection of the disease.

Hypoglycemia. All diabetic patients should be schooled on the effects of hypoglycemia. In addition, members of the immediate family should have some knowledge of what to expect during a hypoglycemic reaction. The symptoms and signs of hypoglycemia are well known. However, a careful review of the so-called warning signs in some diabetic individuals has shown that some hypoglycemic reactions occur with little or no warning. This problem was studied by Sussman by observing the progression of symptoms and signs in patients with insulin-induced hypoglycemia. He noted that the patient's behavior progressed through an initial parasympathetic response followed by diminished cerebral function, a sympathetic response and, finally, hypoglycemic coma. The parasympathetic response was characterized by hunger, nausea, and eructation. Lethargy, lassitude, frequent yawning and less spontaneous conversation were characteristics during diminished cerebral function. The sympathetic response which followed was marked by increase in heart rate, hyperventilation and profuse sweating. It was noted that while all patients did not experience all of the above signs and symptoms. the sequence of response was reasonably uniform in all patients. Three distinct groups which were studied and their differences revolved around the sympathetic response. This response was present along with positive warning sign in one group. In another sizable group there were no warning signs in spite of a positive sympathetic response. In a small group there were neither warning signs nor sympathetic response. The clinical implications of this study are obvious and explain the abrupt hypoglycemic reactions which many physicians have noted in daily practice. Treatment is directed toward acquainting the patient with the more subtle signs and symptoms of hypoglycemia. In addition, the timing of extra food for anticipated extra activity should be discussed and advised.

Another clinical problem relating to hypoglycemia has been encountered in association with increasing insulin dosage in "severe" diabetics. Somogyi brilliantly discussed this problem and illustrated the following essential points:

- 1. Blood sugar levels may vary over wide ranges in some individuals despite constant levels of diet and insulin.
- 2. Insulin which is administered to combat the fluctuations may produce temporary, mild and asymptomatic hypoglycemia.
- 3. Hypoglycemia then serves as a stressful event which sets in motion homeostatic mechanisms resulting in hyperglycemia and glycosuria.
- 4. Hyperglycemia and glycosuria are treated by additional insulin with the cycle of hypoglycemia-alarm-hyperglycemia then repeated, etc. A clinical paradox is then encountered wherein "excess insulin action can produce hyperglycemia."

Vicious cycles such as this can be avoided by guarding against mild asymptomatic degrees of hypoglycemia. Accordingly, the recognition of conspicious fluctuations in glycosuria in some individuals should alert the physician to decrease the dosage of insulin in hopes of transforming a "severe" diabetic into a "mild" diabetic who can be managed with much smaller dosages of insulin.

Symptoms of Uncoutrolled Diabetes and Ketoacidosis, Care of the Feet, and Emergencies. These are obvious and forthright items which should be emphasized in the care of any diabetic. They are mentioned largely for the purpose of being complete as the importance is generally well appreciated. Again the patient should be taught not to confuse symptoms of hypoglycemia with symptoms which could be related to the development of ketosis. In the case of infectious processes, it is wise to have the patient check for glycosuria three to four times a day and if sugar spill is heavy, a check should be made for acetone and his physician should be notified. With regard to the feet, ignoring accepted methods of prevention and care can result in serious complications such as ulcers. gangrene, and even loss of a lower limb. While some compromise in the circulation of the lower extremities and feet may contribute to these complications, it should be pointed out that neuropathy is oftentimes more important in the genesis of these problems. This is true because of insensitivity to trivial trauma and to ill fitting footwear in patients afflicted with a peripheral sensory neuropathy.

#### Conclusion

In the communities where we practice medicine, it is estimated that one out of every twenty persons either has diabetes mellitus or is a potential diabetic. Aside from the classical symptoms in overt diabetes, discovery of the mild or prediabetic individual may arise from a suspicious family history or from a host of subtle manifestations encountered in the management of a wide variety of patients (pregnancy, trauma, and neurological problems). Recognition of early diabetes does more than just satisfy academic curiosity. Recent work suggests that efforts to reduce susceptible individuals and the use of certain oral agents may be of benefit in preventing frank diabetes. Newer

diagnostic tests have stimulated much interest, but in most instances, precise diagnosis continues to depend on interpretation of accurate tests of glucose tolerance. A checklist has been proposed by the American Diabetes Association to encourage a more systematic approach to diabetic management. Enforcement of these items depend on proper education, appreciation of psychological factors, and sustained strict control through manipulation of diet and blood-sugar lowering agents.



## Observations on Renal Hypertension: Role of Renal Biopsy

V. Vertes and J. A. Grauel, *Circulation* 28:536 (Oct) 1963

Bilateral renal biopsies, aortograms, and renal split functions studies were performed on a group of hypertensive patients. Although some of them had aortographic lesions or renal split function studies, or both, suggestive of unilateral renal ischemia, all showed evidence of bilateral intrarenal arteriolar disease. The authors caution that the differentiation between bilateral arteriolonephrosclerosis and unilateral renal disease as the cause of hypertension is difficult. Biopsy of the contralateral kidney should show little or no vascular change before the diagnosis of curable renal hypertension is entertained. Surgical intervention should not be considered when severe intrarenal vascular disease is present.

# Pulmonary Vascular Lesions in Systemic Scleroderma

R. L. Naeye, Dis Chest 44:374 (Oct) 1963

Nine cases of systemic schelorderma are described in which extensive pulmonary arterial lesions were found. It is postulated that these vascular lesions contributed to the development of cor pulmonale in seven of the cases. The early vascular lesions had a loose, myxomatous character while late lesions were more compact and cellular. Para-aminosalicylic acid (PAS) and Alcian blue-positive material in the early lesions suggested that carbohydrate-containing protein and mucopolysacharide were present. The pulmonary vascular lesions have many pathogenic features in common with systemic vascular lesions and visceral lesions in the disorder.

# MEDICINE AND RELIGION\*

Mr. Arne E. Larson\*\*

We are concerned this evening with approximately 200,000 physicians and 300,000 clergy who together make up about 3/10 of 1% of our entire population. Educated opinion indicates that these groups contact 91% of our population during the course of any one year. This is accomplished with church congregations, patients in doctors' offices and hospitals, syndicated newspaper articles, radio and T.V. shows.

A recent study on church mental health evaluated the sources of assistance sought by persons having personal problems. The group studied found help from these three major sources:

42% went to a clergyman

24% went to a physician

21/2% went to a psychiatrist

It is interesting to learn that the problems confronting these people were also listed:

45% concerned marital problems

17% concerned parent-child relations

10% concerned juvenile delinquency

The president of the Dade County Medical Association has concisely expressed the relationship of "Medicine, Religion and the Patient."

"For thousands of years man has associated medicine with religion and it has had a profound influence, directly and indirectly, upon medicine. This influence can be traced to Babylonian medicine, 2250 B.C. and more particularly to 400 B.C., when the oath of Hippocrates was written by the great Greek physician. At this time science and religion were introduced into medicine. Prior to this, illness was considered a visitation of evil spirits. The Hippocratic Oath consists of a code of ethics, moral, or a lofty standard of religious principles to be followed by all who practice the healing art. It is centuries old, but yet as modern and as applicable as aerospace medicine.

At times there has been some degree of dominance by religion. The influence of religion upon contemporary medicine is general and somewhat poorly defined, but of considerable importance. The influence of the three major religious sects: Jewish, Catholic and Protestant, is reflected in the practice of medicine in

\*Presentation of Medicine and Religion, Pulaski County Medical Society, Little Rock, Arkansas, February 4, 1964.
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this country and unquestionably have a salutary effect.

Clergy is defined as a 'body of men formally ordained to the service of God.' Physician is defined as 'a person skilled in the art of healing.' Health is defined as 'a state of being sound in body, mind or soul.' Thus it becomes obvious that our ideals, goals, duties, and responsibilities fall into the same general category which can be interpreted simply as service to God's creation: mankind.

Patients are pleased to learn that their doctor has strong religious convictions. They like to know that physicians are saying a prayer, as well as using all the scientific knowledge at their disposal. A solid religious belief helps sustain people during serious illness, great pain and impending death. A state of relative equanimity exists in a religious patient. To him death is not the end but rather the beginning of a state of eternal spiritual existence. The greatest fear or anxiety expressed by the seriously ill and dying patient is for the welfare of his family and particularly, if children remain without proper security for their future.

Many patients come to their physician because of conditions caused by the stresses of life and we should do all in our power to help relieve these stresses and avoid creating any additional ones.

Only by taking the time to learn something of the patient's philosophy, family, occupation, economic status, social background and religious beliefs, can we know how to deal with the patient as an individual. We should not think of a patient as an illness, nor the patient in Room 316, who has had his right lung removed. The cheerful yet sincere physician has a salutary effect upon the sick. Harry Bacon states, 'There is much more in the healing art than administration of medication. The road of pain and physical disability is easier to travel if the physician gives abundantly of his goodness, along with medications.' Science is not enough!

Some of the difficult tasks in medicine are to deal for the incurable patient, impending death or fear of death and the problems which these create among relatives and friends. These

caff for special attention to the patient's philosophy and religious beliefs. The physician should show every possible consideration and kindness to the family and friends. Often these deserve and require more time and attention than the care of the critically ill dying patient.

We have great responsibility in discussing major illness and major surgery with our patients. It is not just the illness, but the whole life of the patient and his welfare and concern of many members of his family which are involved. Both professions should dispel the fear, of many, that serious illness and death is God's punishment for sin and indiscretion. Thorough discussion of the patient's condition allays apprehension and establishes good rapport.

What should we tell the patient with cancer, before and after surgery, particularly if he has an incurable disease? Each situation is handled individually and the truth is couched in the most appropriate terms. The patient's family should definitely be given all the details. Should we use extraordinary means to keep a patient alive when it's obvious that he has a terminal or incurable disease? It is neither wise nor merciful to prolong death. The patient should be permitted to die with dignity and the family and friends will be forever grateful for this consideration. These are problems which call for close cooperation and liaison between the physician and clergyman. Many rough spots can be avoided, if both become partners at the outset and not after tragedy and catastrophe have occurred.

The clergyman should be informed when the patient is to have major surgery, has a major illness and particularly, when it appears that recovery is doubtful. Ideally, both should be present during the terminal moments of life or as soon thereafterwards as possible. This lessens the burden on the physician and is of great solace to the family and friends. Above all, patients should not be abandoned nor allowed to remain in pain during the terminal illness.

Decisions are demanded both from the clergyman and physician today in areas which in times past were not recognized. Because of the dramatic advances in medicine, modern drugs and counselling procedures, members of the two professions often find themselves consulting with the patient and/or his family, regarding decisions involving life and death. Confidence that the average family places in his clergyman and his physician requires that the two consult with each other whenever necessary. 'From their collective judgment will come the means for providing the most effective care and treatment to the patient as a whole man.'

The medical profession recognizes the responsibility to bring the two professions together. Medicine is composed of men and women of all faiths; thus, we should welcome the opportunity to invite clergymen of all faiths to join us in constructive discussion."

Throughout all of America there are many individuals in all walks of life who are becoming deepfy concerned with the necessity of maintaining the total health of man. It is widely recognized that a weakness in any one of the four factors of health—physical, spiritual, medical or social—can and does militate toward illness in one or all three of the other factors.

In 1958 the attention of the American Medical Association was focused on this relationship of physician and clergy and the Board of Trustees of the A.M.A. moved to appoint a Committee on Medicine and Religion. This committee was made up of ten physicians and ten clergymen. The clergymen represented some of the major faiths in this country. In 1961 a new department was established and began its task by contacting leaders of most church groups to learn what had already been accomplished in this area through their studies and to ask them what direction they would recommend for the department's program. Physicians were asked to give assistance based on their experience and personal involvement with the clergy to guide such a program.

The resulting resource material was then used by the department in setting up pilot programs in 20 county medical societies. It is in this setting that the program will achieve its purpose. The state committees on medicine and religion and the National Committee exist to encourage and resource the county societies in their task. On the basis of such programs the department can now offer each society materials with which a program can be carried on.

The sole purpose of the Department of Medicine and Religion through each county medical society is to create the proper climate for communication between the physicians and the clergy-

men that will lead to the most effective care and treatment of the patient.

Already 41 states have approved such a program and have erected committees to implement the work. At least 200 county societies have now engaged in from one to as many as eight joint meetings with the clergy. This is evidence of the concern on the part of both groups to find answers to common problems. The resulting rapport has indeed been felt in many communities and led to better care of patients.

This effort is not designed to evangelize the physicians for this is the responsibility of the churches. The purpose of such a committee is not

to insist that hospitals initiate permanent chaplains because this is the field of operation of the A.P.H.A., C.H.A. and A.H.A. This medical society recognizes itself as one group that shares in the responsibility to bring the two professions together.

Medicine is composed of men and women of all faiths; thus, they may invite clergymen of all faiths to join with them in constructive discussion. Toward this goal then we encourage the county societies to initiate and maintain a continuing program of education, discussion and involvement.



# Factors Influencing Mortality Following Emergency Operation for Massive Gastrointestinal Hemorrhage

J. H. Foster, D. F. Hickok, and J. E. Dunphy, Surg Gynec Obstet 117:257 (Sept) 1963

In a series of 178 operations for massive upper gastrointestinal hemorrhage, 130 were performed as emergency procedures, with a mortality rate of 28.5%. There were no deaths when elective operation was possible. Presence of a serious systemic disease was a major factor; the mortality rate for patients beginning to bleed during hospitalization for another condition was more

than three times as high as for those bleeding before admission. An inverse relation of post-operative mortality to the level of hemoglobin and a positive relation to the amount of blood received were observed. Only three of the 37 deaths in this series occurred in patients receiving less than 10 units of whole blood. The most striking difference as to the type of operation was observed between gastric resection and vagotomy and pyloroplasty. Gastric resection was highly lethal, whereas in elective gastrectomy there was no death. The combination of resection and hemorrhage, rather than resection itself, is considered the lethal factor.



# DIABETES IN ARKANSAS

Hal Dildy, M.D.\*

Diabetes mellitus presents a problem of increasing interest to Arkansas physicians. According to present concepts of incidence and prevalence there should be approximately 2,890 diabetics in Arkansas. This figure is probably lower than the actual diabetic population of our state. During 1963, 10,000 home nursing visits were made by public health nurses in 21 counties in Arkansas at the request of local physicians. Approximately one-third of these visits were made to patients having diabetes.

The State Bureau of Vital Statistics reported on December 9, 1963 that deaths from diabetes in 1950 were 171. These deaths include male and female, white and non-white. In 1962 the number of patients dying from diabetes had increased to 258. These statistics also show that the greatest number of deaths occurred in the eighth and seventh decade of life respectively. It is encouraging to note that the last death occurring at age three years or under occurred in 1958. Two children under one year of age died of diabetes in 1955.

In the recent Diabetes Detection Week conducted in Pulaski County, 4,008 Dreypak tests were submitted for testing.

Of this number 114 were considered positive reactors to the test.

Reports of these 114 positive reactors were mailed to the patient and to their private physician. On January 18, 1964, the following results had been reported by these physicians.

Ten patients were reported by their physicians not to have consulted them thus far. Obviously others have not reported to physicians.

Fourteen were considered by their physicians to be newly discovered diabetics after further laboratory tests.

Four were considered as having been previously known diabetics.

Eleven were considered to be questionable newly discovered diabetics.

Twenty-three were considered negative for diabetes after further laboratory tests.

There has been no response from 52 of the 114 positive reactors. However, it is significant that the detection week conducted in Pulaski County in 1963 resulted in a diagnosis in 25 cases of newly discovered or questionable newly discovered diabetics. Even these incomplete statistics reveal the value of the effort put forth by all persons concerned with this project.

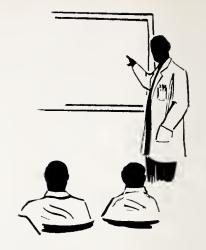
In an effort to further the diagnosis and treatment of diabetes, arrangements have been made through the Division of Chronic Disease Control, Arkansas State Health Department, to pay a reasonable expense account to conduct meetings with medical societies throughout the state on the detection, control and treatment of diabetes. These meetings can be arranged by contacting Dr. Coy Fitch or Dr. George Ackerman of the Department of Internal Medicine, University of Arkansas Medical Center.

As coordinator for Arkansas for the American Diabetes Association, I would be pleased to hear from any physician in Arkansas who would be interested in becoming a member of the American Diabetes Association and who would like to participate in a Diabetes Club. Meetings of this club would be held at the Medical Center and the number of meetings would depend upon the response to this invitation. I regret to tell you that at present the total membership of the American Diabetes Association in Arkansas is seven. Three of these members live outside of Little Rock. Application for membership in the American Diabetes Association can be obtained from the coordinator or any member.

<sup>\*</sup>Donaghey Building, Little Rock, Ark.

# TEACHING SEMINAR

University of Arkansas Medical Center Little Rock, Arkansas



# SUNLIGHT AND SKIN

W. Mage Honeycutt, M.D., Calvin J. Dillaha, M.D., and G. Thomas Jansen, M.D.

This is the first of three articles reviewing the effects of sunlight on normal and abnormal skin. Subsequent presentations will deal with the allergic, degenerative and malignant reactions to sunlight respectively. There is a voluminous literature on this subject, and it is hoped that these reviews will incorporate the significant facts concisely for ready consumption and digestion by the reader. Another purpose is to promote better public education in regard to sunlight and their skin.

Although the sun is no longer considered a diety, sun worship is "bigger and better than ever." This craze of exposing the skin to the sun day after day to enhance one's beauty has, in this decade, become a mania. The sun tan is definitely "in." But the smooth, heavily tanned skin of the 'teens and twenties will be the dry, wrinkled and wizened skin of the forties, when liver spots, crow's feet and keratoses prematurely appear.

The "active" part of sunlight, so far as the skin is concerned, is the ultra-violet (UVL) spectrum. This spectrum ranges from 40 mu to 400 mu but wavelengths shorter than 295 mu never reach the earth's surface, being filtered out completely by the upper atmosphere. Therefore, the effects of sunlight on skin are due to a very small portion of the entire spectrum—295 mu to 400 mu.

Much of our knowledge of the effects of UVL on skin has come from experiments using artificial sources of radiation. These have been used because of their ready availability (even when it rains) and their uniform, constant and measurable energy output. A brief description of these sources will aid one in understanding some of the

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material to follow.

#### Sources of UVL

The most common source of artificially produced UVL is the hot quartz lamp, to which group the ordinary "sun lamp" belongs. Its emission of UVL depends on sending a strong current of electricity through mercury vapor under high pressure and temperature. The hot quartz lamp emits a line spectrum (not all wave lengths are represented), with its peak energy output at 296 mu.

The cold quartz lamp also depends on mercury vapor, but the current, temperature and pressure are low. This lamp has its peak output around 253 mu, which, it should be noted, is not represented in natural sunlight at the earth's surface.

Carbon arc lamps, whose electrodes are carbon rods and are consumed during operation, produce a continuous spectrum with wavelengths ranging from about 280 mu into the infra-red zone. These lamps are used primarily in testing subjects for photo-allergic and phototoxic reactions.

All of the above sources, as well as natural sunlight, are useful in therapy or experimental investigations, and with appropriate filters, a source of UVL of very narrow wavelength can be obtained. Ordinary window glass, for instance, filters out all wavelengths below 320 mu.

#### Sunburn<sup>1</sup>

Probably the best known effect of sunlight on the skin is simple sunburn. The degree of tolerance to sunlight is dependent on several factors: 1) time of year, 2) time of day, 3) latitude, 4) cloud cover, 5) environment, 6) length of exposure, 7) previous exposure and 8) skin coloring.

UVL energy of wavelength 296 mu produces

the greatest erythema response in the shortest period of time, and wavelengths shorter and longer have succeedingly less effect in producing erythema. There is a proportionately greater percentage of UVL of wavelengths 296 mu in midsummer, at mid-day, in lower latitudes, on a cloudy day. Exposure on white sand and snow increases the dose of UVL by reflection from these surfaces. Length of exposure is a critical factor, as well as the protection built up by previous exposures. Skin coloring is of obvious importance; the Negro and dark complexioned peoples have a considerable degree of resistance to sunburning, while the blonde, fair-skinned person is highly susceptible.

The exact mechanism whereby UVL produces erythema of the skin is not known. It has been shown that approximately 95% of the energy is absorbed in the stratum corneum and stratum malpighii, a depth of about .1 mm, leaving only  $5^{or}_{10}$  to penetrate to the dermis. There are two principle theories regarding the mechanism of erythema production: 1) UVL is absorbed in the prickle cell layer, causing a photochemical reaction, with production of a vasodilating chemical substance which diffuses down to the dermis causing vasodilitation of the superficial vessels. It is assumed to be a fairly large molecule, because of the time required for its diffusion, paralleling the clinical delay in erythema after irradiation. Histamine is ruled out as the mediating substance on this and other evidence. 2) The UVL penetrating to the dermis produces a direct toxic effect on the blood vessels, causing vasodilitation. The time lag between irradiation and appearance of erythema could be explained by the fact that a complex chain of chemical reactions are set in motion by the irradiation, requiring a specific time to reach completion. Neither of these hypotheses has been substantiated.

Little thought is given to a moderately severe sumburn, other than to its immediate discomfort and subsequent desquamation. However, the effects are not nearly so short-lived. From a single exposure to UVL producing a moderately severe sunburn, vascular abnormalities may last as long as fifteen months! This has been demonstrated by Holti², who found a reduced whealing response to intradermal histamine for six to eight months following such exposure, and impaired vasomotor tone as long as lifteen months afterwards, as demonstrated by responses following exposure to heat

and cold. Irradiation by UVL may be likened to irradiation with X-ray—there is a cumulative ellect, and the results may be far reaching and even disastrous. Although we have it on ancient and excellent authority that light is good (Genesis 1:4), there is an old adage about "too much of a good thing—."

#### Suntan

The simplest and most accurate way to approach suntanning is that it is a response to injury. It is a built-in protective mechanism of the skin to prevent further damage. It is probably not coincidental that the wavelength of UVL which produces the greatest erythema (296 mu) is the same wavelength which produces the greatest pigmentation response.

There are three bands of UVL which produce a pigmentation response. 1) 253 mu-This band stimulates a weak response which reaches its maximum in two days, then fades very quickly. 2) 296 mu-Pigmentation produced by this band is the greatest, reaches a maximum in seven to ten days, and may last for several months. This is the band responsible for suntanning, and by far the most important. 3) 340 mu-This wavelength is very inelficient as a pigment producer, requiring almost 1,000 times more energy than 296 mu. The darkening of the skin following exposure to 340 mu irradiation is due to oxidation of pre-melanin (colorless) to melanin, is almost immediate in onset, and may last as long as a year. This is known as the Meirowsky phenomenon.

The pigment produced in suntanning is melanin, a biochrome bound to a high molecular weight protein. The exact structure of melanin has not been determined, in part due to its extreme insolubility. Melanin is synthesized by the melanocytes, which form a network of cells at the dermal-epidermal junction. They are derived from the neural crest, are dendritic and transfer melanin granules to epidermal cells via these dendrites. This process of transference has been termed cytocrine by Masson. The pigment-laden epidermal cells mature in the prickle cell layer, become keratinized as part of the stratum corneum, and finally are sloughed.

Melanin production is an enzymatic reaction.<sup>3</sup> The basic metabolic unit of the melanocyte is the *melanosome*, a cell organelle which has *tyrosinase* activity. The melanosome originates in the Golgi material, gradually increases in size and becomes darker (more electron dense) as melanization proceeds. It eventuates in a melanin granule, which

is particulate, and no longer has tyrosinase activity.

The precise chemical reactions and stages of melanin synthesis are not known, but the amino acid tyrosine is the precursor substance. Tyrosinase, a copper-containing oxidase, is necessary to initiate the reaction of tyrosine to dopa, but thereafter dopa can catalyze this and subsequent reactions. Several of the intermediary products have been isolated and identified as quinone compounds.

Pigmentation as a response to injury to the skin by UVL is not the only mechanism of protection. It has been shown that the stratum corneum thickens after UVL irradiation and some investigators consider this a major portion of the protective response, nearly on a par with pigmentation. This is not generally accepted as of much importance, but albinos can develop some tolerance to sun exposure through this mechanism.

#### Physiologic Responses

The only accepted medically beneficial physiological action of ultraviolet light is the synthesis of vitamin D.4 The precursor of vitamin D is contained in sebum, which is secreted onto the skin surface from the sebaceous glands. Irradiation of sebum with UVL in the mid-erythematogenic range (295 mu-300 mu) transforms the precursor into vitamin D, which is then absorbed through the skin. Although this is the only known beneficial action, it seems incredible that such a biochemically useful process is limited to the synthesis of one vitamin.

Some systemic effects of UVL are unexplained, such as the fall in blood pressure and decrease in serum cholesterol after irradiation. There is unanimous agreement that sunshine is health promoting, and everyone has experienced the elation and stimulation felt on bright sunny days, when our joints stop aching and a spring appears in our gait. Likewise, we have felt depression on dark, cloudy days. Are these specific effects of UVL irradiation or merely mental attitudes? And if they are specific UVL effects, where are the receptors for the stimuli? There are many intriguing aspects of sunlight which are still to be discovered and characterized.

#### **Effect On Diseases**

Sunlight, specifically the ultraviolet spectrum, can be and often is a valuable ally in medicine. Since UVL penetrates only to the upper portions of the skin, it is logical that it has its greatest

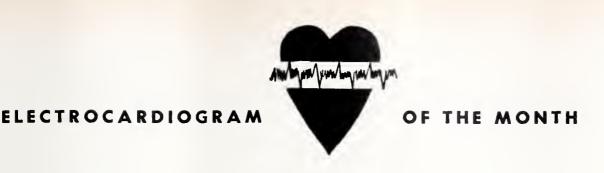
applicability in the field of dermatology. The dermatological diseases which are most often treated with and benefited by UVL are acne, psoriasis, pityriasis rosea, keratosis pilaris, atopic dermatitis, seborrheic dermatitis, nummular eczema and several other specific and non-specific eczematous diseases. The Southwest is populated in small part by persons seeking the sun for alleviation of their skin diseases. The mechanisms by which UVL improves these diseases are still largely unknown. It is generally accepted, however, that the desquamating effect of repeated UVL exposure is the mechanism benefiting acne, pityriasis rosea, and keratosis pilaris. It is also postulated that the effect on psoriasis is a toxic or injurious reaction, probably on enzyme systems of the skin, interfering with biochemical reactions.

Sunlight can be just as harmful to some dermatological diseases as it is helpful in others. In fact, the scales are grossly overloaded on the negative side. A partial list of some of the more important diseases aggravated by sun exposure includes porphyria (both the erythropoietic and cutanea tarda types), discoid and systemic lupus erythematosus, xeroderma pigmentosum, lichen planus, recurrent herpes simplex, keratosis follicularis (Darier's disease), albinism, pellagra, polymorphous light eruption and other photoallergies, actinic keratoses, and even acne and psoriasis on occasion. These last two diseases are usually benefited by UVL, but in the case of psoriasis, an overdose may precipitate a Koebner reaction resulting in marked worsening and even a generalized exfoliative erythroderma. Likewise, overindulgence in sunbathing occasionally precipitates an acute flare of acne, particularly on the back, shoulders and chest. Again, information on the specific mode of action of UVL on these diseases is lacking.

Sunlight not only aggravates some diseases, but also causes some primarily. In the next paper photoallergic and phototoxic reactions will be discussed, with particular emphasis on drug-induced photosensitivities.

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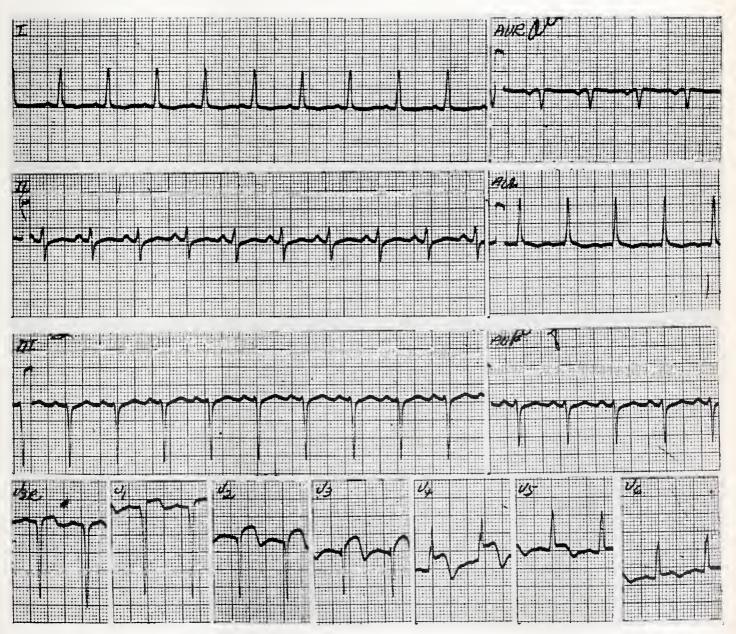
#### WHAT IS YOUR INTERPRETATION?

AGE: 74 SEX: F BUILD: MEDIUM BLOOD PRESSURE: 160/100

MEDICATION: None

HISTORY: Chest pain 2 days, treated for indigestion without relief.

#### **ANSWER ON PAGE 426**

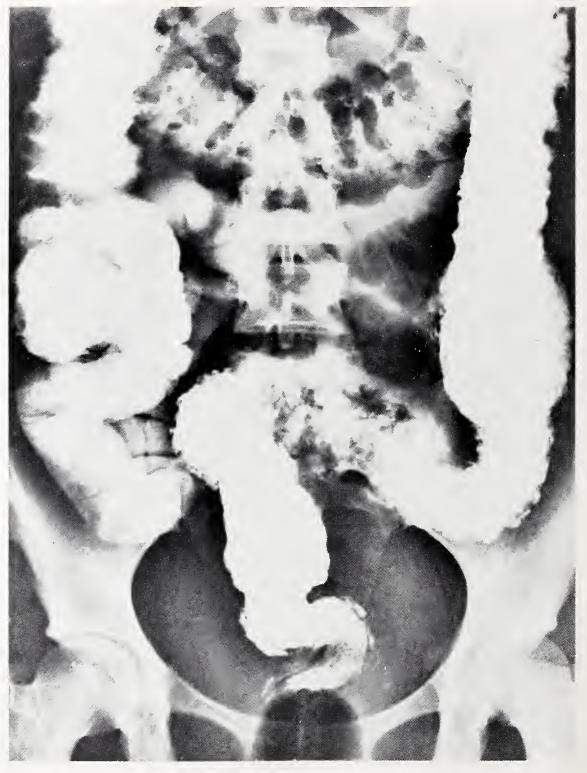


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\*James S. Taylor, M.D., Professor of Medicine

# WHAT IS YOUR DIAGNOSIS?

Prepared by the Department of Radiology, University of Arkansas School of Medicine, Little Rock

#### **ANSWER ON PAGE 426**



No. 18-01-99 21-year-old white female.

HISTORY: This young woman had noted loose, watery bowel movements which frequently contained blood for two and one half months.



## PUBLIC HEALTH AT A GLANCE

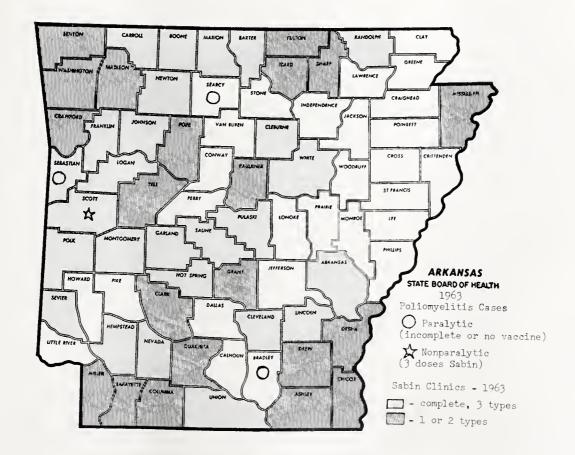
# **POLIOMYELITIS**

No cases of poliomyelitis were reported in the United States the first week of 1964, ended January 4. This represented the first time that no cases had been reported for any week since weekly reporting of poliomyelitis began in 1950, according to available statistical records at the Communicable Disease Center. The greatest number of cases reported for any one week was 4,180 for the 38th week (ended September 20) of 1952. The highest number of cases reported for the first week of any year since 1950 was 253 in 1953. One nonparalytic case has been recorded in North Carolina the 2nd week of 1964 (ended Jan-

uary 11) and two paralytic cases were reported from Florida the 4th week (ended January 25).

No cases of poliomyelitis have been reported in Arkansas during the first six weeks of 1964, and only 3 paralytic and one nonparalytic cases were recorded in 1963, making an all-time low of 4 cases. Our previous low year was 1961 with 23 cases—12 paralytic and 11 nonparalytic—with 3 fatalities. Arkansas' year of highest reported incidence was 1949 with 992 cases. The peak occurred the 28th week (ended July 16) when 99 cases were reported.

Certainly the Arkansas results of using polio-



myelitis vaccine, beginning with the Salk Vaccine Field Trials in 1954, the continued use of Salk vaccine in the following years, and now widespread use of Sabin oral vaccine, are evident in the lowered incidence of the disease and particularly the paralytic status. There was a reduction in utilization of the poliomyelitis vaccine during 1958, apparently on the assumption that the problem was eradicated following the dramatic decline during 1957. The subsequent buildup of a backlog of susceptibles following reduced incidence years set the stage for the epidemic of 1959.

According to reports made to the State Health Department, during 1963 County Medical Societies of 26 counties completed mass immunization of their counties with all three types of the Sabin oral poliomyelitis vaccine, as shown on the accompanying map. One other county, Conway, reports completion in 1964. Twenty-one other

County Medical Societies sponsored Sunday clinics for one or two types during 1963. Jefferson County has begun Sunday clinics in 1964.

Stool specimens of any patient with suspected poliomyelitis, together with the acute serum, should be submitted to the Virology Section of the Arkansas State Hygienic Laboratory as promptly as possible after onset of the illness. The convalescent serum should follow in two to four weeks.

Year	Recorded Poliomyelitis Cases				
	Total Cases	Paralytic	Nonparalytic	Unspecifie	d
1953	322	199	109	14	22
1954	365	253	112		19
1955	186	106	80		8
1956	222	146	76		11
1957	50	25	25		3
1958	33	31	2		
1959	309	231	78		10
1960	36	27	9		
1961	23	12	11		1
1962	26	21	5		3
1963	4	3	1	10 Mg 50 M	



#### ANSWER-Electrocardiogram of the Month

RATE: 110 RHYTHM: Sinus Tachycardia

PR: - .16 sec. QRS: .09 sec. QT: .36 sec.

INTERPRETATION: Abnormal. Slight sinus tachycardia. Acute antero-septal myocardial infarction.

COMMENT: Occasionally extremity leads do not reflect as readily changes of an acute extensive anterior infarction as do precordial leads, as in this example.

#### ANSWER—What is Your Diagnosis

DIAGNOSIS: Chronic ulcerative colitis.

X-RAY FINDINGS: The entire colon, from cecum to rectum, is involved in a pattern of irregular ulceration. There is early "pseudopolyp" formation. This picture results from the coalescence of small ulcers into larger, deeper ones with undermined edges. Left behind are islands and tags of inflamed and hypertrophied mucosa resembling true adenomatous polyps.



# BASIC SCIENCE CLINICAL INVESTIGATION AND THE PRACTICING PHYSICIAN

Alfred Kahn, Jr., M.D.

It is interesting to watch ideas develop in basic research, and then gradually filter through clinical research into the scope of the practicing physicians. Many likely projects fall by the way-side but an awareness of current projects in clinical investigation often provides a preview to coming events in medical practice. Three metabolic studies of possible clinical importance are reviewed here.

Recently, Steinke et al (Journal of Clinical Investigation, Volume 41, p. 1699, 1962) have studied the persistence of serum insulin-like activity after pancreatectomy in cats and dogs; this was measured by a bio-assay technique using rat adipose tissue. The usual assay for insulin is the rathemidiaphragm technique, and this method fails to demonstrate insulin-like activity in the serum of depancreatized animals. This study posed the problem as to whether the substance under study was a type of insulin "that is very slowly metabolized and essentially unavailable to the animal, but available to adipose tissue in vitro, or the assay defects substances not related to insulin at all." The authors favored the former answer.

There are points of resemblance and difference between the insulin-like substance under study here, and insulin, for example, one difference is that anti-insulin serum failed to suppress the serum insulin-like activity under investigation here. It is possible the insulin-like activity is due to an insulin metabolite, precussor or inactive variant.

The cytological localization of ACTH (the adrenocorticostophic hormone), in the human pituitary has been investigated by Fishman, Talbot, McGarry, Beck, and Rose (Journal of Clinical Investigation, Volume 41, p. 1770, 1962). The technique used was that of the fluorescent antibody. This method has been successfully used in studying the localization of growth hormone. The tissue under study was sectioned in such a way that one section could be stained with the fluorescent antibody technique and a comparison slide was made using conventional staining technique. ACTH was demonstrated to be in the basophel cells. An interesting observation of the authors is "that cells containing ACTH may be densely or sparsely granulated, and that monor variations in the color of the basophils-may not be a function of the hormone present in the cells." This technique may have future clinical importance, the authors believe, in identifying hormones in tumors.

Of considerable interest is a recent case of severe hypermetabolism of non-thyroid origin believed to be due to a defect in maintenancy of the metochondrial respiratory control. This is the work of Luft, Ikkos, Palmiere, Eruster, and Afzelius (Journal of Clinical Investigation, Volume 41, p. 1776, 1962). The authors point out that metochondria are the site of cellular respiration. "Normally the respiration of isolated metochondria is obligatorily coupled to the formation of

ATP from ADP and inorganic phosphate, and thus cannot be proceeded at any appreciable rate if either of the latter components is absent from the incubating medium. This phenomenon, usually termed respiratory control, is generally considered to be a reflection of the living cell to regulate its respiration according to the actual demand of energy. Luft et al studied a case of hypermetabolism in which there was no thyroid disease, and in which it was shown by skeletal muscle biopsy that there was a derangement of metochondrial function which produced the hyperthyroid-like state with thirst, polyuris, weight loss, asthenia, etc. The investigations here included biochemical assays, and electron micros-

copy. In many of the cells, examined by microscopy, the metochondria were enormously enlarged; it is not known if this enlargement is related to the functional abnormality. A question that has arisen is the metochondrial defect universal in all cells or localized to skeletal muscles; current studies suggest, but do not prove, that the disorder is limited to skeletal muscle.

The impact of these metabolic studies on clinical medicine is not possible to define currently. They indicate new vistas of experimentation and research, the goal of which or the by-products of which do much to increase our understanding of disease and therapy.



# First Kidney Transplant in State Made at University Medical Center

A team of University of Arkansas Medical Center physicians carried out the first human kidney transplant in Arkansas medical history. With the operation, University Hospital joined a number of others in the Nation carrying out research on transplanting kidneys.

The patient was a 40-year-old veteran who received two kidneys from a 26-month-old child who died from a brain tumor. The child had been hospitalized at the Medical Center. The patient had been under care at the hospital for more than eight weeks. Both kidneys were removed late in October and his normal kidney functions had been carried out by an artificial kidney machine. Dr. William Flannigan, who directs kidney research at the hospital, said the operation means that the University will be "doing more such procedures in the future."

#### Annual Medical Seminar Held in Texarkana

The Bowie-Miller County Medical Society had its annual medical seminar on Saturday, March 21, 1964, at the Holiday Inn in Texarkana, Texas. The general conference subject was "Diabetes Mellitus." The medical auxiliary also had a program for the ladies. A banquet was held Saturday afternoon after the meeting.

#### Foreign Fellowship Awards

Evanston, Illinois—On February 21, 1964, the Association of American Medical Colleges announced that twenty-nine junior and senior U.S. medical students have been awarded Foreign Fellowships which will enable them to obtain supervised medical experience in relatively underdeveloped areas of the world.

The primary objective of the Fellowships is to provide students an opportunity to benefit from unusual clinical experiences and familiarize themselves with medical, cultural, and social problems different from their own. They will be stationed in mission hospitals and outpost medical facilities.

The 1964 award winners include three women and twenty-six men. Mr. Cloise W. Starnes of Marmaduke, Arkansas, will be stationed in Nazareth Hospital in Bihar, India.

# Medical School Application Trends for Classes Entering 1954-1964

The downward trend in first year medical school applicants that had been of concern since 1956 began to show a reversal between the years of 1961 and 1962. It is believed that this upswing will continue.

According to the Association of American Medical Colleges, the number of applicants to first-year classes increased from a low 14,381 for 1961 to 15,847 for 1962, a rise of 10%. The estimated 17,500 applicants for 1963 and 19,500 for 1964 are conservative approximations based on the actual number of students who have taken the Medical College Admission Test the past two years.

Similarly, the number of applications increased by 10% from 53,832 for 1961 to 59,054 for 1962. Preliminary reports from schools to the Association of American Medical Colleges support a conservative estimate of 70,000 applications for September 1963 and 78,000 for 1964, an increase of 38%.

The number of places in the freshman class has risen from 7,576 in 1954 to 8,642 in 1962, with the estimated class sizes for 1963 and 1964 being 8,700 and 8,800, respectively. While this is a substantial increase in absolute terms, it is relatively a much smaller gain than that in the number of applicants.

The number of 22-year-olds in the U.S. remained relatively constant from 1954 to 1961 but has risen markedly since then. The upswing in birth rate beginning in 1940 may account in large part for the recent rise in application activity. Other contributing factors may include general recruiting efforts and increased financial aid for prospective medical students.

#### The Month in Washington

Washington, D.C.—A finding by a special Federal government committee of physician and scientist experts that cigarette smoking is a serious health hazard gave impetus to further research with the objectives of determining the harmful factors in smoking and eliminating them.

The House of Delegates of the American Medical Association had authorized a basic research program into smoking and health before the special committee's report was made public in January. The House Agriculture Committee approved legislation authorizing a Federal research program into how to make cigarettes safe. The Johnson Administration included in its fiscal 1964-'65 budget an appropriation request for \$5

million for research on smoking.

The 10-member Advisory Committee to the Surgeon General of the Public Health Service reached the unanimous conclusions that:

"Cigarette smoking is a health hazard of sulficient importance in the United States to warrant appropriate remedial action . . .

"In view of the continuing and mounting evidence from many sources, it is the judgment of the committee that cigarette smoking contributes substantially to mortality from certain specific diseases and to the overall death rate . . .

"Cigarette smoking is causally related to lung cancer in men: the magnitude of the effect ol cigarette smoking far outweighs all other factors. The data for women, though less extensive, point in the same direction."

Dr. Edward R. Annis, president of the American Medical Association, urged "the American people to give careful and thoughtful attention to this report and to the strong evidence linking smoking to cancer and other diseases."

"It should be noted that the report indicates that further research could be valuable and, in this connection, Surgeon General Luther L. Terry expressed approval of the American Medical Association's comprehensive, long-range program of basic research on tobacco and health, which was announced last December," Dr. Annis said.

"Despite the strong evidence against smoking which has been amassed in this report, it is unrealistic to assume that the American people are suddenly going to quit smoking. Because people will continue to smoke, research efforts should try to find how tobacco smoke affects health and, if possible, to eliminate whatever element in the smoke that may induce disease.

"This is what we hope to do through the AMA research project on tobacco and health."

Three members of the Surgeon General's Advisory Committee were named to the five-member committee that will direct the American Medical Association Education and Research Foundation's long-range program of research on tobacco and health. They are:

Maurice H. Seevers, M.D., Ph.D., chairman of the Department of Pharmacology at the University of Michigan Medical School and named chairman of the AMA-ERF committee; John B. Hickman, M.D., chairman of the Department of Internal Medicine at the University of Indiana Medical School, and Charles LeMaistre, M.D., professor of internal medicine. Southwestern Medical School.

The other two members of the AMA-ERF committee are Paul S. Larson, Ph.D., chairman of the Department of Pharmacology at the Medical College of Virginia, and Richard J. Bing, M.D., chairman of the Department of Medicine, Wayne State University College of Medicine.

The AMA Board of Trustees made an initial appropriation of \$500,000 for the research program, and announced contributions would be accepted from other foundations, industry, voluntary health associations, physicians and other sources—but only if given without restrictions.

On the clear understanding that there were absolutely no restrictions attached, a contribution of \$10 million was accepted from six tobacco companies. These funds will be made available over a five-year period as needed.

The first remedial action advanced by the Federal government was new cigarette advertising regulations proposed by the Federal Trade Commission. The rules, subject to modification after open hearings in March, would require that in all cigarette advertising or labeling:

There be a clear warning that cigarette smoking may cause death; there be no implication that cigarette smoking promotes good health or physical well-being, and there be no claim that smoking one brand is less harmful than smoking another. The Federal government banned the distribution of free cigarettes in Public Health Service, military, Indian and Veterans Administration hospitals. The government also launched educational campaigns pointing out the hazards of smoking to patients in the hospitals.

Highlights of the advisory conunittee report included:

#### CANCER BY SITE

#### Lung Cancer

"The risk of developing lung cancer increases with duration of smoking and the number of cigarettes smoked per day, and is diminished by discontinuing smoking.

"The risk of developing cancer of the lung for the combined group of pipe smokers, cigar smokers, and pipe and cigar smokers, is greater than for non-smokers, but much less than for cigarette smokers."

#### Oral Cancer

"The causal relationship of the smoking of pipes to the development of cancer of the lip appears to be established."

#### Cancer of the Larynx

"Evaluation of the evidence leads to the judgment that cigarette smoking is a significant factor in the causation of laryngeal cancer in the male." Non-Neoplastic Respiratory Diseases, Particularly Chronic Bronchitis and Pulmonary Emphysema

"Cigarette smoking is the most important of the causes of chronic bronchitis in the United States, and increases the risk of dying from chronic bronchitis . . .

"For the bulk of the population of the United States, the importance of cigarette smoking as a cause of chronic bronchopulmonary disease is much greater than that of atmospheric pollution or occupational exposures . . .

"Cigarette smoking does not appear to cause asthma."

#### CARDIOVASCULAR DISEASE

"Smoking and nicotine administration cause acute cardiovascular effects similar to those induced by stimulation of the autonomic nervous system, but these effects do not account well for the observed association between cigarette smoking and coronary disease. . . . It is more prudent to assume that the established association between cigarette snioking and coronary disease has causative meaning than to suspend judgment until no uncertainty remains."

Maternal Smoking and Infant Birth Weight

"Women who smoke cigarettes during pregnancy tend to have babies of lower birth weight.

"Information is lacking on the mechanism by which this decrease in birth weight is produced.

"It is not known whether this decrease in birth weight has any influence on the biological fitness of the newborn."

#### Health Insurance and Medicine

The people of Arkansas have reached a high level in health insurance protection. December 31, 1962, 54 per cent of the state's population were covered by some form of health insurance for the costs of hospital and medical care. This compares with the national figure of 76 per cent of the civilian population—some 141 million persons-having health insurance. State data follows:

Extent of Health Insurance Coverage and Other Figures

-Number of persons with hospital expense

insurance

987,000\* 959,000\*

-Number of persons with surgical expense insurance -Number of persons with regular medical

599,000\*

expense insurance -Number of persons with major medical in-

surance -	167,000°
-Total health insurance benefits paid (1961)	
By insurance companies for	4
hospital, surgical and med-	
ical care, including loss of	
income = \$21,351,000	
By Blue Cross-Blue Shield	
and other plans for hospi-	
tal, medical and surgical	
-Number of health insuring organizations licensed in the state	0=1
	271
(269 insurance companies, 1 Blue Cross-	
Blue Shield and similar groups, and	
4 other health plans).	
Hospital Statistics	
-Number of hospitals** in state (1962)	77
-Number of hospital beds available (1962).	5,842
-Number of persons admitted during the	
year (1962)	233,292
-Number of persons under hospital confine-	
ment on an average day	4,022
-Average length of time patient remained	
in hospital	6 days
-Average cost per hospital day	
Professional Services	,
-Number of practicing physicians (1962) =	1,219
-Number of practicing dentists (1962)	566
-Number of registered pharmacists (1962)	935
	0.00

\*Net total of people protected-climinates duplication among persons protected by more than one kind of insuring organization or more than one insurance company policy providing the same type of coverage.

\*\*Nonfederal, short-term general and other hospitals.



#### Miss America At AMA Convention

Miss America (Donna Axum of Arkansas) will be the featured entertainer at the Arkansas Breakfast at the AMA Convention in San Francisco in June. She will arrive in San Francisco Sunday afternoon, June 21st, before the breakfast Monday morning, June 22nd in the Gold Room of the Fairmont Hotel.

A dinner party honoring her is planned Sunday evening. June 21st, at which all Arkansans in attendance are invited. In order to make the necessary catering arrangements, it is requested that those who plan to attend notify Dr. R. B. Robins, P. O. Box 128, Camden, Arkansas. Please make your reservation as soon as possible.

## Family Doctors to Probe Behavorial Problems

Kansas City, Mo.-Family doctors from all parts of the U. S. will gather in Atlantic City April 12-16 for the sixteenth Annual Scientific Assembly

of the American Academy of General Practice. The meeting will be housed in Atlantic City's Convention Hall. The theme of the 1961 Assembly will be "The Family in Medical Perspective." Other topics include diagnosis in heart disease and in collagen disorders, occupational medicine, episiotomy, soft-tissue radiology, puzzling inlant rashes, sinusitis, post-infectious hepatic functions, and the mouth as an indicator of general health.

#### The Third Annual Conference on Research in Medical Education

The Third Annual Conference on Research in Medical Education will be held in conjunction with the 75th Annual Meetings of the Association ol American Medical Colleges in Deuver, Colorado, October 15-22, 1964. Original papers will be presented in 15 minutes and a discussion period will follow each paper. Authors whose papers are selected for presentation will be required to submit manuscripts in final draft at the time of the Conference for later publication in the *Journal of* Medical Education.

The deadline for abstracts is June 1, 1964. All abstracts will be published and indexed in the Journal of Medical Education. The program of the Conference will be announced in August.



#### Dr. Jesse D. Riley

Dr. Jesse D. Riley of Booneville died January 11th at the age of 72.

He was superintendent and medical director of the Arkansas State Tuberculosis Sanatorium from 1930 until his retirement in July 1955 and was carrying the title of superintendent emeritus at the time of his death.

Dr. Riley became a national and international ligure because of his writing and his work at the sanatorium, during the time he was superintendent of the sanatorium, the largest state-owned institution in the United States.

He was graduated from the Tulane Medical School. Just prior to his graduation, he collapsed with acute tuberculosis. He went to Texas for treatment and recovered. He resolved to devote his career to fighting tuberculosis. After his recovery, Dr. Riley became superintendent of Baptist Tuberculosis Hospital in El Paso, Texas, and went from there to the Booneville Sanatorium in March of 1930 to succeed Dr. John Stewart as head of the institution.

Dr. Riley was associate professor in the Department of Medicine at the University of Arkansas School of Medicine from 1941 to 1947; professor in charge of tuberculosis instruction, 1947 to date of retirement; president of the Southern Sanatorium Association in 1944; president of the ATA in 1947 and a member of its board of directors from then until retirement. He was a fellow of the American College of Physician, American College of Chest Physicians, and was a member of the American Medical Editors' and Authors' Association. He was also a member of the following organizations: Arkansas Medical Society, American Medical Association, National Tuberculosis Association, American Trudeau Society, World Medical Association, Southern Tuberculosis Conference, and the Association of Editors of Tuberculosis Publications.

Dr. Riley was chairman of the Arkansas Medical Advisory Board, Selective Service System, in World War II, and received a Congressional award for special services during that period. In 1951 he was presented with a bronze plaque for his services to Arkansas Veterans by the local post

of Veterans of Foreign Wars and he was voted "Honorary Arkansan of the Year."

#### Dr. Robert M. Eubanks

Dr. Robert M. Eubanks, age 77, died January 17th at his home in Little Rock. He was born at Dover and completed premedical training at The College of the Ozarks. He was graduated from the University of Arkansas School of Medicine in 1913. Dr. Eubanks had been a member of the staff of St. Vincents Infirmary and the Arkansas Baptist Hospital and served on the Board of Trustees of the Booneville Sanatorium. He was chief of staff of the Arkansas Baptist Hospital for 21 years. He was a member of the Pulaski County Medical Society, the Arkansas Medical Society, and the Southern Medical Association and was a fellow of the American College of Surgeons and the International College of Surgeons. He was a member of the Official Board of the First Methodist Church in Little Rock.

#### Dr. B. A. Kuehne

Dr. Benjamin Ainsworth Kuehne, 43, died January 29, 1963, in a Little Rock hospital. He was a graduate of the University of Texas Medical School and interned at Municipal Hospital in Washington, D.C. He did postgraduate work at Columbia University in New York. He served in the Air Force during World War II.



## PERSONAL AND NEWS ITEMS

#### Dr. Go Moves to Blytheville

Dr. Alex S. Y. Go, formerly of Hughes, has announced the opening of an office in Blytheville for the practice of general medicine. His wife, Dr. Mayo Go, also a general practitioner, will work with him at their clinic. Dr. Alex Go is a graduate of the Tulane University School of Medicine. He interned at John Gaston Hospital in Memphis. Dr. Mayo Go is a native of Hughes; she was graduated from the University of Tennessee Medical School and also interned at John Gaston.

Dr. Hopkins Joins Dr. Edds

Dr. Ed G. Hopkins has joined Dr. M. C. Edds for the general practice of medicine in Van Buren. Dr. Hopkins has recently worked with a pharmaceutical company in New York—prior to that, he practiced in Nashville, Arkansas.

#### **New Doctor at State Hospital**

Dr. Edward K. Allis has begun his psychiatric residency training at the Little Rock unit of the Arkansas State Hospital. Dr. George W. Jackson, hospital superintendent, announced the appointment. Dr. Allis, a native of Oklahoma, was graduated from the University of Arkansas School of Medicine.

#### Dr. Washburn Building Clinic

Groundbreaking ceremonies were held January 10th for Dr. C. Y. Washburn's new medical clinic to be located on West Main Street in Cabot. The clinic will be called Gordella Clinic and is expected to be completed in April.

#### Dr. Grace Retires from Air Force

Dr. Jesse K. Grace received his certificate of retirement December 1st from the Air Force and moved to Russellville to make his home. He had completed 35 years' service, and retired with the rank of colonel. Dr. Grace is a native of the Russellville area and a graduate of the University of Arkansas School of Medicine.

#### Dr. Dennis Addresses Des Arc PTA

Dr. James Dennis, Birth Defects Center Director at the University of Arkansas Medical Center in Little Rock, was guest speaker at the January meeting of the Des Arc PTA meeting. Dr. Dennis showed slides on the different types of birth defects and answered questions.

#### Dr. Modelevsky Speaker at Jonesboro PTA Meeting

At the January meeting of the Jonesboro PTA meeting, Dr. A. C. Modelevsky spoke on "Exceptional Children." He has taken a great interest in the Arkansas Children's Colony and his remarks provided a valuable insight into work with the exceptional child.

#### Benton Physicians Enter Partnership

Drs. John D. Wright and Joe Martindale of Benton have announced that they have entered a partnership. Alterations are being planned for their offices on Cross and Short Streets so that they will be connecting. Dr. Wright has been in Benton nine years, Dr. Martindale, about four years.

#### Dr. Barnett Moves to New Offices

Dr. J. C. Barnett has moved to new offices on the corner of Fourth and Spring Streets in Heber Springs. The office building was constructed after much study and visits to other modern medical facilities of its kind and it embraces all of the features for the comfort and convenience of patients. The building was designed to also include office for Dr. Mickey Barnett, now an internate St. Vincents in Little Rock, who will join his uncle in practice this summer.

#### Dr. Nunnally Moves to Gurdon

Dr. Robert Nunnally, formerly of Sparkman, has taken over the offices of Dr. A. W. Thompson in Gurdon. He is a graduate of the University of Arkansas School of Medicine and served five years as a USAF medical officer prior to entering private practice in Sparkman.

#### Dr. Weber Chief of Staff

Dr. James R. Weber of Jacksonville has been named chief of staff at Rebsamen Memorial Hospital. Vice chief is Dr. Rex Moore and Dr. Wayne Lott was named secretary-treasurer.

#### Dr. Smith Elected New Chief of Staff

Dr. Bedford Smith of West Memphis has been elected new chief of the medical staff at Crittenden Memorial Hospital. Dr. Smith succeeds Dr. T. Murray Ferguson. Dr. W. J. Wright of Earle is vice chief and Dr. Chester Peeples is secretary of the staff.

#### **Gurdon Hospital Board Honored**

The staff of the Gurdon Hospital honored its board of directors with a dinner in January. Special guests other than the directors were Dr. and Mrs. J. L. Ellis and Dr. and Mrs. Bill King, all of Camden, Dr. and Mrs. R. H. Nunnally and Dr. and Mrs. George Peeples, all of Gurdon.

#### New Location for Dr. Pellar

Dr. Donald H. Pellar, who has been a resident in neurology in the Mayo Foundation in Rochester, Minnesota, has left that city and will be located in Little Rock, Arkansas.



WHEREAS, in order to express themselves on the recent loss of Dr. B. A. Kuehne, the members of the Pulaski County Medical Society do pause with respect, and

WHEREAS, Dr. Kuehne was a member of the Society and his contribution to the health and well-being of persons in this community will be

long remembered and appreciated, and

WHEREAS, the members of this Society extend to his family and friends their heartfelt sorrow, THEREFORE

BE IT RESOLVED that a copy of this resolution be sent to his family, and that we shall cause a copy of this resolution to be published in the Journal of the Arkansas Medical Society,

BE IT FURTHER RESOLVED that a copy of this resolution be inserted into the Pulaski County Medical Society records.

By Action of the Memorials Committee Pulaski County Medical Society John E. Greutter, M.D., Chairman Read and approved, February 4, 1964

WHEREAS, the passing from this life of Dr. David W. Sinton, a valued member of the medical community and of the Pulaski County Medical Society, is noted with sincere reverence and sorrow, and

WHEREAS, Dr. Sinton served with devotion and skill on the staff of the University of Arkansas Medical Center, and

WHEREAS, Dr. Sinton had attained unequaled respect for his knowledge in his specialty among his colleagues;

BE IT THEREFORE RESOLVED, that the Pulaski County Medical Society express to his family the sympathy of our organization,

That a copy of this resolution be made a matter of record in the minutes of this meeting,

That a copy be sent to his family, and

That a copy be published in the Journal of the Arkansas Medical Society.

By action of the Memorials Committee Pułaski County Medical Society John E. Greutter, M.D., Chairman Read and approved, February 4, 1964

WHEREAS, an all-wise Providence has seen fit to remove from our midst, Dr. Robert M. Eubanks who for nearly fifty years was a valued co-worker and faithful member of the Pulaski County Medical Society; and

WHEREAS, as a physician in his chosen field, he attained an enviable measure of distinction in the community and with his colleagues as well as the gratitude and love of a host of friends and patients;

BE IT THEREFORE RESOLVED, that the Pulaski County Medical Society express to his family its heartfelt sympathy on the loss that they have sustained,

That a copy of this resolution be made a matter of record in the minutes of this meeting,

That a copy of this resolution be sent to his family, and

That a copy of this resolution be published in the Journal of the Arkansas Medical Society.

By action of the Memorials Committee Pułaski County Medical Society John E. Greutter, M.D., Chairman Read and approved, February 4, 1964



## PROCEEDINGS OF SOCIETIES

#### **Craighead-Poinsett**

Dr. B. P. Raney of Jonesboro was installed in January as president of the Craighead-Poinsett County Medical Society. He succeeds Dr. Vestal B. Smith of Marked Tree. Dr. Durwood Wisdom was named president-elect, and Dr. Orval E. Riggs was re-elected secretary-treasurer. Dr. J. H. Mc-Curry of Cash is secretary-treasurer emeritus. Drs. Joe Ledbetter and Ernest Hogue were appointed co-chairman of the Program Committee for the monthly meetings. The program for the January meeting of the Society was presented by Dr. John

Smoot, local radiologist, who discussed "X-Ray Findings in Diseases of the Gastro-Intestinal Tract."

#### **Bradley**

Dr. W. C. Whaley has been named president of the Bradley County Medical Society. Other officers elected at the January meeting of the Society were: Dr. James W. Marsh, vice president; Dr. G. F. Wynne, secretary. Dr. Wynne was also named the group's delegate to the State Convention. Dr. D. Miles was welcomed into the Society at the same meeting.

#### Report of Committee on National Legislation, Arkansas Medical Society

JOE NORTON, M.D., Chairman

The Committee on National Legislation of the Arkansas Medical Society was formed last year and the membership is composed of Dr. John Faris, Jonesboro; Dr. Kenneth Duzan, El Dorado, and myself. We have co-opted many others to help us over the state. The function of the committee was to keep abreast of national legislative efforts in the field of medicine, and to channel such information to the Medical Society, and to formulate such programs of education and action as might be indicated.

The committee members attended a legislative conference on the AMA level in Chicago as an indoctrination. Plans were made and accepted by the Council of the Arkansas Medical Society to co-opt many physicians as leaders in legislative activities over our state. This was done. These leaders were called together for a series of training sessions in August 1963 and October 1963. Most of the 35 physicians who volunteered their services also took part in the training sessions. The names of these men were placed on a mailing list of the American Medical Association to receive all legislative information. These men together with others were designated as Operation Hometown Chairman in their areas. They were asked to seek every opportunity to inform their physician colleagues, the Medical Auxiliary groups, and the organized lay groups in their area concerning the stand of Organized Medicine on national legislative activities, especially the King-Anderson Bill.

In addition, we alerted the Auxiliary of the Arkansas Medical Society and the Arkansas State Medical Assistants Society and other allied groups including lay groups and sought their help in expressing opposition to King-Anderson type of medical legislation. These groups have responded well, alerting and encouraging their members and their officers to help us in this legislative battle.

Many of the physicians who joined us over the state have organized meetings, some of their county societies, some including their auxiliaries, and a few including layleaders. At these meetings the stand of organized medicine as regards the Kerr-Mills law and the King-Anderson Bill have been expressed. These have been lively sessions and have been most helpful.

Much effort has been made to encourage letter writing, not only by physicians over the state, but by their wives and their medical assistants and their friends.

It should be added that the efforts of this committee have been greatly augmented by the initiative and the interest and the zeal of the office of the Arkansas Medical Society. Literally thousands of pamphlets concerning medical legislation have been sent to the various offices of the physicians over the state from our Fort Smith Arkansas Medical Society office. I am indeed grateful to Mr. Schaefer and to his fine office personnel for this initiative and this aid.

The King-Anderson plan for the federal government controlled health care for the aged under the Social Security system is one of the most significant domestic issues confronting the American people. Similar schemes since 1948 have been stalled by an upsurge of public protest. This is more than a medical issue. It affects the economic and political freedom of our country. The hour for decisive action has come. It will come again and again. If we truly believe in a system of medicine that is free of political control over hospital patients or physicians, then we must inform ourselves daily, keep up-to-date on the activities in the field, and we must discuss with our friends and our neighbors and our colleagues our reasons for opposition to such a system of medicine. Please take this opportunity and frequent opportunity to write to your United States senators and to your congressmen and tell them how you stand. Ask them to oppose the King-Anderson Bill and to give the Kerr-Mills law and voluntary health insurance a chance to do the job, and to meet what need might be present in this field. This is your responsibility and your privilege, your obligation. No one can do this for you.

#### Report of the Committee on Medicine and Religion of the Council of the Arkansas Medical Society

Joe Norton, M.D., Chairman

The Council of the Arkansas Medical Society has recently appointed a committee on Medicine and Religion composed of Dr. John Busby of Little Rock, Dr. Jack Kennedy of Arkadelphia, and myself.

This committee has not yet made definite plans for action. We are obtaining materials from the Department of Medicine and Religion of the American Medical Association. We intend to digest these materials and to come up with some plan of recommendation to the Council of the Arkansas Medical Society, possibly by the time of the annual meeting in Hot Springs in 1964. At this time, I would like to ask any one of our physician members of the Arkansas Medical Society who have interest in this activity to please contact me. The committee certainly should include members of various religious faiths. We also hope to be so organized as to offer help in the planning of county society programs on Medicine and Religion by the fall of 1964.

### Report of the Senior Medical Day Committee of The Arkansas Medical Society

JOE NORTON, M.D., Chairman

The tenth annual Senior Medical Day, sponsored by the Arkansas Medical Society and the Arkansas Academy of General Practice for seniors of the University of Arkansas Medical School and their wives and invited guests, was held in the Continental Room of the Hotel Marion at 8 p.m. on April 21, 1963. Dr. H. King Wade, Jr., President of the Arkansas Medical Society, was the master of ceremonies.

After a social period and dinner a panel of speakers was presented as follows: Mrs. Hoyt Choate of Little Rock discussed The Doctor's Wife. Dr. Amail Chudy of North Little Rock discussed The Doctor in General Practice. Dr. Thomas E. Townsend of Pine Bluff discussed The Doctor and Organized Medicine. Mr. Kearney Dietz of Little Rock discussed Opportunities in Arkansas. There was a question and answer period following the panel presentation.

The program was relaxed and informal and moved rapidly without any difficulty. The program was received quite well. I am grateful to the panel for the effort expended and pleased with the results of their presentation.

This activity is certainly a worthwhile program of the Medical Society. I do hope that it will be continued. I also would like to recommend that the program be broadened to include junior students, as well as senior students. I know that this would almost double the cost. However, the aim of the program is to not only entertain these students and their wives and guests, but also to try to encourage them in the advantages of general practice, and the advantages of staying in Arkansas for their training and for their practice. I do think it might be well to get these ideas into their minds before their senior year. Quite often, by the time we reach them with this program, plans have already been made for internships in other areas outside our state.

The program for this year was on Tuesday evening. March 31, 1964, in the Continental Room of the Hotel Marion. Dr. Joe Verser, President of the Arkansas Medical Society, presided. The program was presented in conjunction with the Pulaski County Academy of General Practice, and they obtained as a speaker for the evening. Dr. Carroll Whitten of Louisville, Kentucky, Speaker of the House of Delegates of the American Academy of General Practice.

## Jefferson County

The Jefferson County Medical Society has announced a "Victory Over Polio" program to be carried out in the county. Dr. S. C. Monroe, president of the society, said that every person over six weeks of age is eligible for the vaccine to be given at three clinics beginning in January and ending in April. Dr. M. R. Wirthlin, Jefferson County Health Officer, is chairman of the Medical Society Polio Committee.

## Independence County

Dr. J. J. Monfort of Batesville has been installed as president of the Independence County Medical Society, the third time he has served in that capacity. Dr. Chaney W. Taylor of Batesville is vice-president, and Dr. J. M. Robinette of Newark is secretary-treasurer. Drs. Robinette and Taylor were also elected as delegates to the State Convention, with Drs. Monfort and Charles Taylor to serve as alternate delegates.

#### Clark County

At the beginning of the year 1963, the Clark County Medical Society pledged itself to a more active program. Mr. Howard E. Campbell, Administrator of the County Hospital, was appointed executive secretary to assist the Society in its activities. Mr. Campbell will continue to serve in this capacity during the year 1964.

During 1963, the Society sponsored and successfully administered the Oral Polio Vaccine Immunization Program. Besides several scientific programs, one monthly meeting was a joint meeting with the pharmacists of the county and was devoted to a review of the regulations governing the prescribing, dispensing and administering of legend drugs. Mr. Eugene Warren, consulting attorney of the Arkansas Pharmaceutical Association and the Arkansas Medical Society, was the guest speaker.



A new member of the Bradley County Medical Society is DR. DALLAS D. MILES. A native of Monticello, Arkansas, Dr. Miles received his preliminary education from Arkansas A&M and the University of Arkansas. His M.D. degree was obtained from the University of Arkansas School of Medicine in 1949. He served his internship at the Santa Rosa Hospital in San Antonio, Texas. Dr. Miles has practiced in Marvell and Marked Tree, Arkansas, El Campo, Texas, and was in Waller, Texas, for eight years. His office is now located at 409 East Central in Warren, Arkansas. Dr. Miles is a general practitioner.

DR. DEANE G. BALDWIN is a new member of Pulaski County Medical Society. He is a native of Huntsville, Arkansas, and received his preliminary education from Arkansas State Teachers College. His M.D. degree was obtained from the University of Arkansas School of Medicine in 1958. Dr. Baldwin served his internship at the University Hospital. His specialty is pediatrics

and his office is located at 806 North University in Little Rock.

Pulaski County Medical Society announces that DR. OSCAR KOZBERG is a new member. A native of Russia, he received his M.D. degree from the University of Minnesota in 1935. Dr. Kozberg served his internship at the Anchor Hospital in St. Paul, Minnesota. He has practiced in St. Paul, Minnesota, and Mooselake, Minnesota. Dr. Kozberg's specialty is psychiatry and he is at the Arkansas State Hospital in Little Rock.

Pulaski County Medical Society announces that DR. JOE K. LESTER has been added to its roster of members. Born at Clarion, Iowa, he received his pre-medical education from Iowa State University in Ames, Iowa. His M.D. degree was received from Oklahoma University School of Medicine in 1952. Dr. Lester practiced in Shamrock, Texas, from 1953-1958 and he was in residency training from 1958 until 1962. His office is located at 4300 West Markham in Little Rock. Dr. Lester's specialty, is orthopedic surgery.

A new member of the Pulaski County Medical Society is DR. FRANK R. LUDWIG. He is a native of Wilson, Arkansas, and received his premedical education from the St. Louis University. In 1958, he received his M.D. degree from the St. Louis University School of Medicine and interned at St. John's Hospital in St. Louis, Missouri, He was in residency training from 1959 until 1963. Dr. Ludwig's specialty is general surgery and his office is located at 27th and Pike Avenue in North Little Rock.

DR. IRVIN LEIGHTON MILLARD is a new member of the Pulaski County Medical Society. A native of Russellville, Arkansas, his preliminary education was received from Hendrix College in Conway, Arkansas. His M.D. degree was obtained from the University of Arkansas School of Medicine in 1957. Dr. Millard served his internship at the Los Augeles County General Hospital in training from 1958 until 1962. His office is located at 4300 West Markham in Little Rock. Dr. Lester's specialty is orthopedic surgery.

Pulaski County Medical Society announces that DR. JAMES J. PAPPAS is a new member. Born at Hot Springs, Arkansas, he received his pre-medical education from the University of Arkansas.

In 1956, he received his M.D. degree from the University of Arkansas School of Medicine. He served in the U.S. Navy from 1958-1960 and was in residency training from 1960-1963. Dr. Pappas' specialty is otolaryngology. His office is located at 1610 West 3rd in Little Rock.

A new member of the Pulaski County Medical Society is DR. NILS C. PEHRSON. A native of Norway, his pre-medical education was received from the University of Arkansas. His M.D. degree was received from the University of Arkansas School of Medicine in 1953. He served in the U.S. Army from 1953-1956. He practiced at Perryville, Arkansas, from 1956-1958 and at Town Creek, Alabama, from 1958-1959. He is a pathologist. Dr. Pehrson's office is located at 5808 West Markham in Little Rock.

Pulaski County Medical Society announces that DR. JOHN A. TEETER has been added to its roster of members. He is a native of Huntsville, Arkansas, and received his pre-medical education from Hendrix College in Conway, Arkansas. In 1957, his M.D. degree was obtained from the University of Arkansas School of Medicine. Dr. Teeter's specialty is pediatrics and his office is located at 806 North University in Little Rock.

DR. JAMES W. WILSON is a new member of the Pulaski County Medical Society. A native of Jonesboro, Arkansas, he received his pre-medical education from Vanderbilt University. He received his M.D. degree from the University of Arkansas School of Medicine in 1960. He took his graduate training at Villanova University and served in the U.S. Navy from 1952-1956. Dr. Wilson is at the University Medical Center in Little Rock and his specialty is internal medicine.



# BOOK REVIEWS

ELECTROCARDIOGRAPHY, by Michael Berureiter, M.D., F.A.C.P., Assistant Clinical Professor of Medicine, University of Kansas Medical School; Chief of Electrocardiography, St. Mary's Hospital, Kansas City, Missouri; Fellow of the American College of Cardiology and Fellow of the American College of Chest Physicians. 2d. Edition,

illustrated, pp. 202, published by J. B. Lippincott Company, Philadelphia and Montreal, 1963.

This text book of Electrocardiography is well written and quite well illustrated. It does not contain any information not already contained in numerous other books on this subject. As a text, it is certainly good and would be of value to medical students and practicing physicians, however, the big objection is that there are so many books already published on this topic which covers exactly the same material.

INTERNAL MEDICINE IN WORLD WAR II, Volume II, INFECTIOUS DISEASES, prepared and published under the direction of Lieutenant General Leonard D. Heaton, The Surgeon General, United States Army. Editor in Chief Colonel John Boyd Goates, Jr., MC., USA. Editor for Internal Medicine W. Paul Havens, Jr., M.D., illustrated, pp. 649, published by the Department of the Army, Office of the Surgeon General, Washington, D.C., 1963.

This is an extremely informing book recounting some of the experiences of the Medical Department of the United States Army pertaining to infectious diseases. This volume concerns World War II and deals with respiratory diseases. sandfly fever, dengue, Q fever, scrub typhus fever, typhus fever, neurotropic virus diseases, diphtheria and meningococcal infections. To the physicians who practiced in World War II, this book will be a fascinating experience. To physicians interested in military medicine, the book will be of great interest. The authors are outstanding and the book is excitingly well organized and written. This book is heartily recommended to all physicians interested in medical aspects of military medicine.

CURRENT DIAGNOSIS AND TREATMENT, by Henry Brainerd, M.D., Professor of Medicine and Chairman, Department of Medicine, University of California School of Medicine (San Francisco), and Physician-in-Chief, University of California Hospitals (San Francisco), Sheldon Margen, M.D., Associate Professor of Human Nutrition Department of Nutritional Science, University of California (Berkeley), and Associate Professor of Social Welfare, University of California (Berkeley) Lecturer, Department of Biochemistry, University of California School of Medicine (San Francisco), and Milton J. Chatton, M.D., Assistant Clinical Professor of Medicine, Stanford University School of Medicine (Palo Alto), and Geriatric Consultant, Palo Alto Medical Clinic, pp. 870, published by Lange Medical Publications, Los Altos, California, 1964.

This text is arranged in outline form. It contains a moderate number of charts and no pictures or sketches. It is a worthwhile handbook for a medical student or intern to have on the ward. It is not adequate as a reference book. The information contained in this text is authentic and accurate but the text has a very limited use.

COUNSELING IN MEDICAL GENETICS, Second Edition, by Sheldon C. Reed, Ph.D., Director, Dight Institute for Human Genetics, The University of Minnesota, pp. 278, published by W. B. Saunders Company, Philadelphia and London, 1963.

The family physician will find this book of some interest. It is written in a language that a lay person could understand. On the other hand, the value of this book as an important addition to one's library is somewhat dubious. It is recommended as an acceptable brief text on genetic counsel.

# TUBERCULOSIS



## ABSTRACTS

Sponsored by Arkansas Tuberculosis Association

## VALUE OF CLINICAL AND LABORATORY FINDINGS IN CRYPTOCOCCAL MENINGITIS

The prognosis for cryptococcal meningitis has greatly improved since the introduction of amphotericin B. Definitive diagnosis depends upon isolation and identification of C. neoformans. The clinician must have a high index of suspicion in any case of meningitis.

Before the introduction of amphotericin B in 1956, three quarters of the patients with cryptococcal meningitis died during the first year of illness.

In the present report the course of the disease in 40 patients studied at the Clinical Center of the National Institutes of Health during the years 1956-62 are reviewed. Of the 40 patients, 36 received amphotericin B.

#### **DIAGNOSIS**

Prior to the diagnosis, headache was the most frequent symptom of which the patients complained. It was described as mild to severe, occasional to continuous, dull to sharply painful, and gradual to sudden in onset. Mental changes were the next most common complaint and included confusion, personality changes, defects in memory, agitation, and psychosis. Visual abnormalities occurred in two-fifths of the patients.

In 6 patients, symptoms referable to the central nervous system either were absent or, if present, did not lead directly to a diagnosis of meningitis.

In 39 patients lumbar puncture and examination of the cerebrospinal fluid were performed before diagnosis and treatment. In all but one case the cell count was abnormally high, and in all but four the protein value was elevated. The opening pressure was above the normal limit in 64 per cent whereas the sugar value was below normal in only 55 per cent of the patients.

Differential cell counts were available in 35

patients and revealed predominately a lymphocytic response. Yeastlike forms were seen on direct examination of the cerebrospinal fluid in 20 of the 35 patients studied.

#### CULTURES POSITIVE

Cerebrospinal-fluid culture was positive for *C. neoformans* in 38 of the 40 patients. Culture of specimens other than cerebrospinal fluid was performed in 34 cases, and in 20 (59 per cent) of these, at least one specimen was positive for *C. neoformans*. Urine was positive in 37 per cent of patients tested.

Of the 40 patients in the study, 36 received amphotericin B. Thirty-one of the treated patients improved and five, all of whom had coexisting disease, died of progressive meningitis or disseminated cryptococcosis. Deaths due of progressive meningitis usually occurred early in the course of treatment. The four untreated patients also died.

As of January 1, 1963, 17 of the 31 patients who had improved remained well, three had died of causes unrelated to cryptococcosis, and the remaining 11 had had one or more relapses of meningitis. All of the relapses occurred within one year of the end of treatment.

#### DRUG ADMINISTRATION ROUTES

It was the practice of the authors to administer amphotericin B to the more seriously ill patient by both the intravenous and intrathecal routes and to the less seriously ill by the intravenous route alone. With this choice of treatment three of the 12 patients (25 per cent) who received the drug by both routes died of progressive meningitis as compared to two of the 24 (8 per cent) treated by the intravenous route alone. However, of the patients who improved, relapse tended to be less frequent among those who received the drug by both routes than among those who received it by the intravenous route alone. The difference in relapse rates between the two groups was not significant, however, and comparability of the two groups was not provided

WILLIAM T. BUTLER, M.D.; DAVID W. ALLING, M.D.; ANDERSON SPICKARD, M.D.; and JOHN P. UTZ, M.D., The New England Journal of Medicine, January 9, 1964.

for by prior planning in the allocation of treatment. It appears desirable to undertake a clinical trial to assess the value of intrathecal therapy. Patients treated by the intrathecal route invariably had an initial rise in the cerebrospinal protein value, which later fell.

In the five patients who died despite therapy the cerebrospinal-fluid sugar value improved, but not the values for pressure, cells, and protein. In the treated patients who survived, there was generally a prompt and sustained improvement in all values during treatment. After treatment, improvement continued but at a slower pace in those who did not relapse.

#### RELAPSE

Of the 31 patients who improved during the original course of treatment, 24 have been observed for at least a year since the end of initial therapy. Of these, 11 (46 per cent) have had a relapse. Relapse could not be related to the duration of illness before treatment, nor could it be related to the dosage of drug given or to the presence of coexisting disease.

The proportion of relapses was significantly greater among patients with initial protein values less than 100 milligrams per 100 milliliters than among those with values above 100 mg.

Coexisting disease occurred in 20 of the 40

patients. The diseases were diabetes mellitus, Hodgkin's disease, sarcoidosis, myeloid metaplasia, silicosis, and carcinoma of the breast. Relapse of meningitis was not more frequent in patients with coexisting disease than in those without. However, patients with coexisting disease often did poorly during initial treatment.

#### COMMENT

Follow-up data demonstrate that amphotericin B is reasonably effective not only in averting death in cryptococcal meningitis but also in restoring health. However, apparent recovery may be followed by a recurrence of illness and this sequence may be repeated two, three, or even four times.

Consideration of the chemotherapeutic requirements in other relapsing infectious diseases suggests such possibilities for improvement as longer periods of treatment and use of other chemotherapeutic agents with amphotericin B.

At present, neither of these possibilities appears to hold promise. In a previous study, larger doses of the drug were found not to decrease the likelihood of relapse. And combined therapy is precluded by the lack of an agent other than amphotericin B that is effective in the treatment of cryptococcal meningitis.



## Coronary Heart Disease: Limitations to the Application of Lessons Learnt From Underprivileged to White Populations

A. R. P. Walker (44 East 23rd St, New York 10) Circulation 29:1 (Jan) 1964

Mortality from coronary heart disease (CHD) is extremely uncommon among people of the Bantu tribes in South Africa. It is often stated that a diet of low fat content might confer a measure of protection against CHD, such as is experienced by the Bantus. However, it must be noted that Bantu die as frequently as whites from cere-

bral vascular disease. Moreover, they suffer greatly from "nutritional" or cryptogenic heart disease, responsible for over a third of cardiac patients admitted to hospitals and three quarters of whom succumb within five years. The diet of the Bantus, not only is low in fat, but compared with that of whites, is low in animal protein, and often very high in carbohydrate and crude fiber. The Bantus differ from whites in regard to activity, smoking, liver disease, alcohol consumption, infections, coronary anastomosis, and stress. Not only the diet, but all factors have to be evaluated in relation to CHD.

San Francisco, 22

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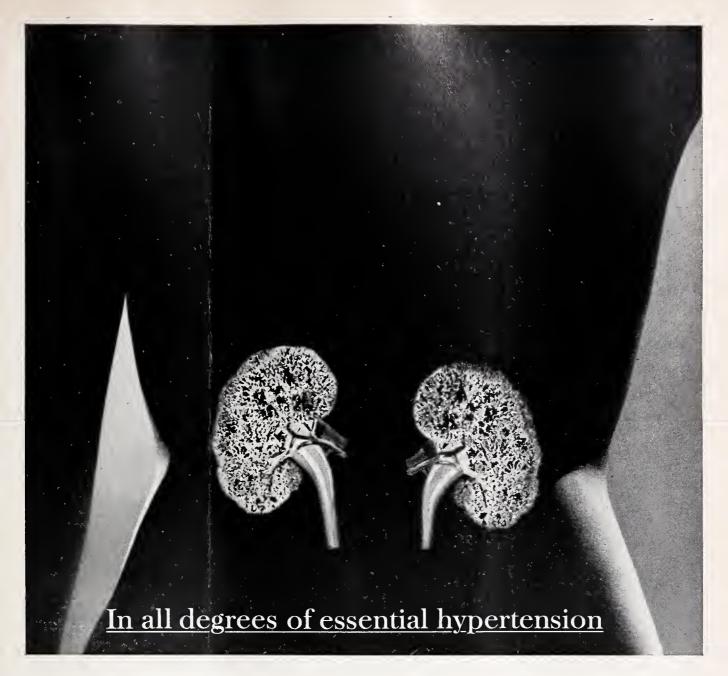
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## THE JOURNAL OF THE ARRANSAS MEDICAL SOCIETY

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## DOMESTIC DISCORD AND THE DOCTOR

Fred O. Henker, III, M.D.\*

HE AVERAGE PHYSICIAN SPENDS a significant part of his time working with problems arising out of disturbed marriages whether he chooses to do so or not. With ninety percent of our population married by the time they reach the age of forty it naturally follows that the patients who consult physicians are largely married people or else they contact him as parents of his patients. Some of these marriage relationships are peaceful and others quite stormy. If evaluated regarding harmony, all marriages could be arranged along a continuum from the absolutely perfect union to the absolutely incompatible association. Since there is doubt that anything absolutely perfect exists, and the absolutely incompatible couples have probably already separated, we are left with the main bulk of continuing marriages more or less disturbed, in many cases to a marked degree. Thus physicians deal with parties of disturbed marriages.

Further, it is quite likely that disturbed marriages affect the diseases which the physician treats. These individuals find themselves in a situation not only deficient in the supply of anticipated gratifications, but often disturbing and painful; and yet most of them feel constrained to remain in it because of religious scruples, cultural aversion to divorce, or practical considerations such as provision of a home for children and maintainance of financial support. They are in a chronic state of frustration and stress with no clear avenue of escape, which can easily lead to disruption of homeostasis in the mental or physical sphere and thence to illness. The following two studies illustrate the relationship between marital disturbance and illnesses which may be seen any day by any physician.

#### **Emotional Complications**

Stress in the husband-wife relationship is a factor in many emotional problems. There is the

obvious anxiety, depression and guilt; but in a great number of cases personality disorganization reaches the extent of psychiatric conditions such as situational reactions, neuroses and psychoses. This is borne out by a study of one hundred consecutive adult patients referred to the University of Arkansas Psychiatric Clinic. Twenty-two initially gave domestic difficulties as the cause of their distress and thirty-nine manifested assorted psychiatric diseases in which complete workup revealed marital discord as a prominent aggravating or precipitating factor. Of the remainder, six were widowed and eight were single. Of the sixtyone marriage problem cases, thirty-four had such basic unstable or deviant personalities that the moderate pressure of the give and take required in marriage had upset their precarious balance yielding psychiatric disease; or the personality was so extreme as to elicit untoward reactions from the spouse, which in turn led to strained relationships, heightened tension and ultimately precipitated illness. The remaining twenty-seven had relatively stable personalities, but were married to persons manifesting antisocial, inadequate or rigid compulsive features producing interpersonal friction which eventually exceeded tolerance and precipitated psychic pathology. Thus any physician seeing emotional illness is likely to be dealing indirectly with marital discord.

#### Physical Complications

Of even more interest to the general practitioner are the physical repercussions of disturbed marriages. As many authors have written (1), chronic stress affects various organ systems by way of hormones and autonomic nerves, altering their function; and, if continued long enough, eventually leads to tissue pathology. Such illness is referred to as psychophysiologic. This phenomenon is evidenced by heavy morbidity among members of a psychotherapy group composed of

<sup>\*</sup>University Medical Center, Little Rock, Arkansas.

couples experiencing domestic trouble (2). They were seen primarily because of emotional problems but were also observed with regard to concurrent physical pathology. All were between the ages of twenty and forty, married at least two years and with at least one child. Histories revealed friction of over one year's duration up to nine years. The group is in its fourth year and during this period thirty-seven couples have participated for periods of from one month to two years. Among these, thirty-one individuals, involving twenty-nine couples, manifested chronic continuous or recurring physical disease which was not present before marriage, or was accentuated afterwards and repeatedly showed exacerbation concurrent with episodes of increased marital tension. Diagnoses were as follows: hypertension 2, hypoglycemia 1, laryngitis 1, menorrhagia 11, migraine 4, neurodermatitis 1, obesity 3, peptic ulcer 7, tenosynovitis 4, and ulcerative colitis 1. In addition dysmenorrhea was practically universal among the women and there were numerous other purely subjective complaints. Statistics for use in comparing this incidence to that of the general population are scarce since many such cases never require hospital care; however Coleman (3) gives the United States incidence of psychophysiologic diseases as twenty million, representing a prevalence of about 10%. Compared to this the couples' group yielded a much higher morbidity rate with thirty-one affected individuals registering a prevalence of 42%, in spite of the fact that they come from a relatively vigorous and disease resistant period of life. From this study it is evident that many physical diseases constitute the smoke above the glowing coals of domestic strife.

Unfortunately the children of troubled marriages are often affected also. Many cases of nightmares, anorexia, enuresis, phobias, etc., can be traced to stress resulting from conflict between parents.

The prevalence of marital problems having been presented we now come to the detection or diagnosis. In keeping with the earlier statement that perfection probably does not exist in marriage relationships we are not seeking to find whether or not marital discord exists, but rather is the amount present sufficient to interfere with health. This is a delicate question. Tact is vital here. Direct questioning can cause resistance or evasion, especially in a new patient, because pride

and timidity in our culture still preclude open discussion of such subjects as marriage; so time should be allowed for establishment of rapport and then nonthreatening topics related to marriage, such as recreation, finances and handling of children, approached in such a manner as to provide the patient ample opportunity to divulge marriage problems when he feels like it. At times the helpful information does not come directly but can be deduced from hints, and then must be tactfully clarified. Often dramatic evidence of tension release is noted after the patient has been able to share knowledge of his trouble with a trusted professional individual.

#### The Physician's Responsibility

Once the existence of significant marital disturbance is known, the physician, if he treats the patient conscientiously, is obligated to see that something is done about it. To disregard it is to neglect a potent focus of stress which has a bearing on the patient's mental and physical health as well as the outcome of medical therapy. If he does not take part in the treatment he may throw the patient open to care of possible medical problems by ill prepared, improperly supervised workers—purely for the want of better services. The need is great and, if it is not met, there will eventually spring up ranks of workers independent of the medical profession.

In a way the treatment of domestic problems is psychotherapy. Marital strife is uncomfortable and therefore, certainly not apt to be created on purpose. Rather it is the result of interaction between personalities, one or both of which, either spontaneously or influenced by circumstances can produce friction. Treatment, then, involves working with the partners in such a way as to adjust attitudes, values and responses to each other and circumstances toward a more harmonious existence. This approximates psychotherapy more than anything else. Furthermore marital disturbances are so fraught with problems involving reproduction, frigidity, contraception etc. that a medically trained worker is almost essential. Physicians, having anatomic, physiologic, psychiatric and clinical training plus the prestige inherent in their profession-assisting as they do with the most fundamental and intimate areas of birth, living, illness and death carry a special entree into the problems of man and wife. They are therefore the natural ones to undertake the treatment or to supervise others doing it.

#### Therapy Techniques

The general process of working with disturbed marriages is essentially a combination of evaluation and adjustment. Through conversations with both partners, as well as such relatives and associates which may be available, evaluation can be carried out revealing areas of conflict, environmental situations needing correction and occasionally the need for specialized measures such as psychiatric referral of serious emotional disorders or appropriate care for alcoholism. Especially in the latter instances the physician is the logical one to guide in getting these done.

The adjustive techniques are more complex. Since no two cases are exactly the same, no general rules are available. Instead, through an understanding of the dynamics of human behavior, and application of appropriate principles fabricated specifically for each case, the patients must be led to work out their own solutions. These must be entirely their own solutions, free from influence by bias, prejudice and pre-conceived notions of the therapist. The giving of helpful hints and suggestions is occasionally permissible but major instructions, such as obtaining a divorce, changing jobs or giving up a child, are practically never appropriate. This amounts to supportive psychotherapy, helping patients achieve higher levels of maturity and confidence in themselves and their family units. The unit identification is particularly important, since in disturbed marriages, one or both partners is likely pursuing individual desires or expressing individual drives without due regard for the partner and adjustment can be achieved only by restoration or creation of family identification instead of individual identification. The physician can help bring this about by: accepting each partner equally as a person of worth, regardless of past behavior; showing confidence in their abilities to overcome problems; stimulation of expression of attitudes, ideas and feelings; encouragement of helpful attitudes which are brought out; and occasional reassurance that the situation can be improved.

Questions are asked frequently and for varied reasons. If they are felt to be attempts to consume time or trap the physician into making decisions which rightfully should be made by the patient, they should be avoided. If they seem to be genuine requests for information, they may be answered, preferably in such a way as to bring out further discussion. Since these questions fre-

quently pertain to physical, sexual or medical matter we have another reason for considering the physician as the appropriate one to treat marriage problems.

Marriage therapy interviews require time. Thirty to fifty minute sessions are usually necessary because people don't warm up to talking about personal problems quickly. It is understood that the busy practitioner doesn't have time for many such cases; however, this forces us to make a choice: if adequate care is given we must either find time or get the patient to other workers—either medical or under medical supervision.

An important requisite to therapy is the participation of both partners. A patient is apt to lose whatever has been gained in treatment upon return to the uncooperative spouse. In other cases the breach can be widened by suspiciousness on the part of the nonparticipating mate, or the complaints accentuated by unreciprocated recitation by one partner. The physician is particularly well fitted for obtaining this double cooperation due to the likelihood of his being accepted as a neutral, qualified authority in the community. Occasionally he can make use of related physical illness as a subtle means of securing cooperation.

Both individual and joint sessions are desirable. When seen singly, the patient can talk without the inhibitory effect of the presence of the spouse, but there is a tendency to distort facts in the direction of self benefit. On the other hand, joint sessions have the disadvantage of limitation of freedom of expression produced by the presence of the spouse, and occasional aggressive outbursts between the two; but the statements are much more apt to be true, or else are challenged, and the suggestive effect toward interpersonal adjustment is much more potent. Joint sessions should not be attempted until after individual sessions have been held with both partners so that aggressive, controlling or disturbing individuals can be detected, and to prevent one uninterviewed partner from feeling he was plotted against if an interview were held with the spouse. Even in experienced hands joint sessions can be quite troublesome.

A modification of the interview structure has been tried at University of Arkansas Medical Center with some success—a couples' psychotherapy group, as was mentioned earlier (2). It is composed of about five couples, selected on the basis of emotional disorders related to marital stress, with provisions for coming and going as some leave improved and new couples are brought in. Meeting one night a week these people discuss problems of marriage freely in a more or less relaxed manner with ample opportunity for expression of feelings. Advantage is taken of the facilitating effect of group dynamics to improve communication between partners, create some insight into the nature and universality of most problems and to encourage family identification. This type of therapy has been acceptable and helpful to most of the couples for whom it has been recommended.

To maintain continuity, activities may be suggested for between sessions. Projects or recreation with common goals may help turn individual identification to family identification. Another type of activity is the search for and practice of religion suitable to both. Granted, many couples use religion as a battleground; there remains a good chance that some may be more accepting of religion during this time of trouble and its values may replace more selfish motives. Assigned reading may be helpful, but it is unlikely that any book can cover the exact situation at hand, so reading had best be used as a basis for discussion in sessions with an attempt to move from the content into the situation being treated.

#### **Ancillary Assistance**

The physician will do well to acquaint himself with whatever agencies are available in his community for assistance with marriage problems. It

is likely that the most readily available source is the clergy. By maintaining a working relationship with the ministers in the community so as to know their personality features, their abilities and philosophies pertaining to domestic problems he may maintain a valuable source of therapeutic aid. More and more ministers are receiving training in counseling and are dealing effectively with increasing numbers of domestic problems. This is especially beneficial if the minister and physician coordinate their efforts. Unfortunately community agencies for the ease of marriage problems are rare in Arkansas, but this need not be permanent. The entire country is now alert to pyschological problems and needs, so the time may be right for the creation of new facilities for treatment, training and research in this field or the inclusion of marriage problems within the scope of existing or planned organizations.

#### **Summary**

The prevalence of marital discord as a precipitating factor in physical and psychiatric diseases is discussed. Adequate medical care thus entails consideration of marriage problems, much of which must be done by the family physician because it is his logical role and because other therapists are scarce. General suggestions regarding handling of matrimonial problems are given.

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#### Erythromelalgia: Review of Fifty-One Cases

R. R. Babb (1631 N San Jose St, Stockton, Calif),D. Alarcón-Segovia, and J. F. Fairbairn II Circulation 29:136 (Jan) 1964

Erythromelalgia is characterized by a burning distress of the extremities accompanied by redness and increased temperature of the skin. These symptoms are initiated or exacerbated by an increase in environmental temperature and diminished by measures that cool the skin. Of 51 pa-

tients with this clinical syndrome, seen at the Mayo Clinic between 1951 and 1960, 30 had primary erythromelalgia and 21 had secondary erythromelalgia. Particularly significant was the relation of erythromelalgia to the myeloproliferative disorders. The primary type occurred in younger individuals and was more often bilateral, produced pain of greater intensity, and involved larger areas of the affected extremities. The pathological physiology of this syndrome remains unknown.

## Gastro-Intestinal Disease: Functional versus Organic

Morris Pasternack, M.D.\*

RRESPECTIVE OF WHAT ORGAN systems one might discuss—there is one common factor—we have more patients presenting themselves with functional problems than organic and yet organic disease may be present to complicate the picture. The gastro-intestinal tract exemplifies this aspect of medicine probably more so than any other system.

From antiquity on through the centuries there are recorded effects of emotional stress on the gastro-intestinal tract. The accounts of the vomiting and diarrhea of soldiers before and during battle in ancient and modern wars are very simple examples of the effect of severe stress on the gastro-intestinal tract. Little was done of scientific nature regarding this observation other than correct interpretation with regard to cause and affect, until the last century.

William Beaumont, (1) with his patient, Alexis St. Martin, began the first significant scientific observations with regard to gastro-intestinal physiology. These studies were reported in 1833 and over the next hundred years there were several others who had an opportunity to study patients with a gastric fistula. Until 1940 most of the studies had been done largely with regard to the physiology and chemistry of digestion. In 1942 Stewart Wolf and Harold Wolff began studies on a 56 year old man, "Tom", who had had a gastrostomy since the age of nine years (2). It seems that Tom had an esophageal stricture after drinking hot clam chowder and a gastrostomy was necessary. During surgery his status became very poor, and an inadequate plastic closure was accomplished. After this, there was a fairly large collar of gastric mucosa which had herniated out onto the abdominal wall. Tom recovered and over the next few years he learned to take care of himself very well. Then there was over a thirty year interval from the time he had last seen a physician to when he was studied by Wolf and Wolff. At the age of 56 there was bleeding about the gastrostomy, followed by an anemia, and this forced Tom to seek medical aid. The physicians gradually gained his confidence and were able to persuade him to come to work in their laboratory as a handyman and laboratory assistant. He was Alvarez (3) has over many years as a clinician focused attention on the emotional aspects of gastro-intestinal symptoms. He has stressed the importance of the history in placing all symptoms in proper perspective. While he has so greatly emphasized the relationship of emotional stress to symptoms he does not do this to the exclusion of proper consideration for organic disease. In his writings and lectures he had tried to teach doctors to properly mix scientific knowledge with a little psychiatry and a lot of common sense.

Many organic diseases of the gastro-intestinal tract can be very definitely diagnosed, and there can be clear cut evidence of considerable pathology, and yet one cannot be sure that the abnormality present is the cause of the presenting symptoms. By the same token, there can be violent gastro-intestinal tract symptoms and no pathology whatsoever demonstrated by the usual laboratory and x-ray studies. To say there is nothing wrong has no meaning if the patient is miserable and incapacitated from these symptoms.

Many functional patterns can be recognized and one need not run every possible test or x-ray study in order to make a diagnosis of a functional abnormality. Very often it is impossible to know how far to go along the line of diagnostic studies with an obviously functional disorder. We often know beforehand, that irrespective of what we find with our studies, the presenting complaints are completely unrelated to any disease state. If

given specific duties and responsibilities and was subjected to the usual stress and strain of such employment. Tom had a very volatile personality, and it was possible to study the effect of virtually every human emotion on this man's stoniach mucosa. Emotionally charged situations were not induced but when they did occur, studies were done. Also if Tom developed certain fears, such as losing his job, these fears would not be dispelled too rapidly. The physicians knew much of his personal problems and during periods of personal stress they followed him closely. Almost everything that had been learned from animal stomach experimentation could be confirmed on this patient. Similar studies since have been done on the colon, using patients with a colostomy.

<sup>\*971</sup> Madison Avenue, Memphis 4, Tennessee.

we do too much, we are subjecting the patient to unnecessary expense. If we do too little, then the patient will go elsewhere for a more "thorough" examination. From a practical standpoint we have to do enough to rule out any significant organic disease. The determination of what is enough in the way of diagnostic studies can actually be only an educated guess which is largely determined by the age of the patient, the nature of the presenting symptoms, the background and previous knowledge of the individual.

Some of the functional aspects of gastro-intestinal tract symptoms along with the organic lesions that have to be considered with a varying degree of seriousness will be presented.

Starting with the oropharynx, we know that organic disease can usually be diagnosed readily because of the relative ease of examination. One does not have to exert too much diagnostic effort to recognize a patient who has pharyngospasm or a globus hystericus. Usually the "lump in the throat" occurs in the presence of stress, and while it may be difficult to determine what the stress factor is, the entity itself is not difficult to recognize. Aerophagia is common, and it can present a pattern of discomfort from the esophagus on down into the stomach which may become distended, and also the complaint of "gas" in the lower gastro-intestinal tract can be related to the air swallowing. If a person has a tendency to swallow air, and develops organic disease of the upper gastro-intestinal tract, this symptom may become much worse. Often there is hyperventilation along with this and this adds to the discomfort.

Regurgitation of food (not vomiting) can be on a functional basis, however, one has to look for an esophageal diverticulum which may be present, and this is usually readily diagnosed with a barium swallow. If there is a delay in diagnosis of an esophageal diverticulum, it is probably no great tragedy. However, carcinoma in the esophagus can be another matter. Most occur in lower one-half. The average in a lapsed time from onset of symptoms to diagnosis is about six months with esophageal carcinoma. The early symptoms can be considered functional, and usually there is a greater delay in diagnosis in a person who is unstable than in a very stable individual who suddenly starts having difficulty. One is more likely to promptly study the latter individual than the one who has been having functional complaints for years. The early symptom may be, "the food just wouldn't go down." This could be due to cardiospasm, and if there happened to be unpleasantness at meal time as often occurs in many families, the discomfort would likely be attributed to this form of stress. Foreign bodies in the esophagus often are neglected, especially in the patient who has many complaints. Fish and chicken bones are frequent offenders. Usually there will be very sharp localization of pain and no change in description with repeated questioning when a foreign body is present.

A hiatal hernia may present a problem. Despite its demonstration, it may or may not be responsible for the presenting symptoms in a given patient. Sometimes it is delightful to be able to give a profound neurotic a definite diagnosis. Often the answer to our problem will be in the strength of a radiologist, who, with pressure, can document a diagnosis on film. Some radiologists feel that some degree of herniation can always be demonstrated. It is our privilege to attach as much or as little importance to the diagnosis as is necessary to help our patient. We are asking for trouble when we advocate surgical correction unless we are sure that the lesion present is causing symptoms that cannot be relieved by medical measures. Actually most symptomatic hiatal hernias can be managed very adequately with conservative treatment.

It is well known that carcinoma of the stomach can be a most treacherous entity, and there can be delay in diagnosis. It is not uncommon for the disease to be missed by repeated radiological examination by competent radiologists. Sometimes repeated examination by every means available is necessary, even in the most neurotic patient.

Peptic ulcer is quite common and is usually diagnosed readily. The tense, spastic individual who would have functional complaints anyway, is very prone to have this disease, and probably in no other is there such an overlay of functional and organic symptoms. When all is going well, there are no ulcer symptoms. When there is undue stress, symptoms return and the ulcer may become active again, depending on time factors.

Gall bladder disease can present many problems. Very often, even though we see one or more stones in the gall bladder, we cannot be sure as to what it is doing to the patient symptomatically. No one can question the fact that a diseased gall bladder should be removed if there are no absolute or relative contraindications to surgery. However, removal will not always insure subsidence of the patient's symptoms.

Diverticula in the intestinal tract can cause difficulty. With inflammatory change, such as diverticulitis, there is usually pain and fever. Diarrhea is not a frequent symptom. Often the finding of diverticula is incidental and may not be causing any symptoms.

The colon is often the principal target area of stress, and yet there are many organic possibilities. Pain due to spasm, diarrhea, and constipation are just not specific of anything. The fact that a person has had a nervous diarrhea for many years does not give him an immunity to carcinoma of the colon and might make him a good candidate for a diagnosis of ulcerative colitis at some future date. The psychosomatic aspects of this disease are well documented.

The finding of parasites in a stool, especially ameba, often start something that cannot be finished. Some laboratories will make the diagnosis more readily than others, and there may be a fair number of people who have ameba in their stools, but actually very few will have amebic disease of the bowel. Whether amebic disease is present or not, a patient might be helped by just having a positive diagnosis. However, the other side of the coin is this: some neurotic patients become a greater problem following a diagnosis of parasitic disease. Sooner or later they become convinced that the ameba have not been completely removed and symptoms progress or new ones develop. We have to recognize the fact that while a neurotic patient may accept a diagnosis of an anatomical abnormality fairly well and may conveniently use it as a crutch, the thought of harboring parasites of one sort or another is not a happy one and may lead to a severe obsessive type psychosis.

Obstructive disease of the colon—and carcinoma in this region can be the problem—will often produce nausea before it will produce a significant anemia or change in bowel habit. Nausea is a very non-specific symptom—it may be functional in origin or be due to a physiologic abnormality and it may not be taken too seriously.

Excessive fat intake, over-eating (uausea can be produced reflexely by distending any hollow organ) excessive smoking, severe headache—all can cause nausea—most likely through vagal stimulation. Drug induced nausea also has to be considered. One cannot order a barium enema on every patient who presents nausea, but it should be done on a basically stable person in which it is unexplained.

Another aspect of gastro-intestinal studies that warrants discussion is the fact that so many are negative and the attitude of a patient toward a negative study. The tense, anxious patient with chest pain will go to a physician, be examined, and undergo necessary studies to evaluate his cardiac status. When he is told all is well, he is happy. This patient's counterpart whose stress target area is his gastro-intestinal tract expresses disappointment when told there was nothing abnormal present. This attitude of disappointment, in turn, often is reflected in the referring physicians comment to the radiologist. So, as a result, the radiologists tend to accommodate us with long descriptions of minor abnormalities and often these mean nothing. Again it is a matter of judgment on the part of the physician as to how much emphasis shall be placed on these abnormalities.

There are a few less common entities that should be considered because of symptomatology which might be typical of functional illness, especially if there is a history of known psychotic behavior.

Porphyria can produce severe abdominal pain with obstructive signs to the point of making one consider surgical exploration. There can be an associated psychosis which may add further difficulty. The presence of porphyrins in the urine is diagnostic.

Abdominal Migraine or abdominal epilepsy are considered to be abdominal equivalents or varients of the usual forms. These patients will usually have an abnormal electroencephalogram and often relief is obtained with anticonvulsant drugs.

In older patients with arteriosclerosis, abdominal angina may be present—pain due to inadequate blood supply (obstruction) in the mesenteric arteries, analogous to the substernal pain of a patient with coronary disease. Gastro-intesti-

nal x-ray studies may be entirely negative and with an associated absence of physical findings, such pain may be considered to be of functional origin. One characteristic feature of the pain is that it will occur shortly after every meal. Diagnosis can only be confirmed by an aortogram.

#### Summary

An attempt has been made to review some of the problems involved in evaluating gastro-intestinal symptoms, especially those that are common to both organic and functional disease.

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#### Long-Term Administration of Corn Oil in Management of Patients After Myocardial Infarction: A Four-Year Study

W. C. Watson (Glasgow, Scotand) Brit Med J 2:1366 (Nov 30) 1963

The findings of a ong-term administration of a dieit low in animal fat with the addition of corn oil given to a group of 28 male patients, who were between the ages of 43 and 65 and were admitted with and surviving a first attack of acute myocardial infarction, is reported. Two diets were prepared—one of 1,630 calories and the other of 2,080 calories—supplemented with 57 gm of corn oil daily. The results revealed that in 70% of the patients this regime produces a maximum decline in cholesterol levels greater than 25% of the starting value and maintains a mean reduction of 15% over a two-year period in almost the same 70% of the patients. From consideration of the subjects as a whole, a significant lowering of the serum cholesterol level can be maintained for a three-year period, after which there appears to be a general decline in the degree of control of the cholesterol level. This may occur because dietary adherence becomes less strict, or some kind of tolerance to the action of corn oil develops. In individual patients, however, there is evidence of cholesterol control extending after four years of therapy. Therefore, it is concluded that corn oil supplemented by a diet low in animal fat

is possible as a long-term measure for the lowering of the serum cholesterol level. Not only is this safe and acceptable to the great majority of patients, but there are virtually no clinical contraindications.

#### **Early Chloroquine Retinopathy**

P. Henkind (550 First Ave, New York), R. E. Carr, and I. M. Siegel *Arch Ophthal* 71:157 (Feb) 1964

Thirty-nine patients taking chloroquine or its derivatives for varying lengths of time were selected for study. Fourteen of these patients manifested early signs of chloroquine retinopathy, and a much greater number showed corneal pathology. An attempt was made to evaluate the diagnostic and prognostic value of several functional tests with particular emphasis on the electro-oculogram (EOG) and electro-retinogram (ERG). Macular mottling with or without loss of the foveal reflex was the first visible sign of retinopathy. Patients in the early stages of chloroquine retinopathy may often be visually asymptomatic. The early retinopathic changes have been observed to regress if therapy is discontinued. The majority of patients with early retinopathy also showed reduced ERG or EOG, but neither of these abnormal test results, taken individually, was considered diagnostic. Periodic testing of patients taking chloroquine is recommended.



## INSURED WORKER MAY CHOOSE

Alan G. Cazort, M.D.\*

Since publication in the A.M.A. News of January 6, 1964 of an article, *Insured Worker May Choose M. D.*, there has been considerable confusion among physicians, compensation insurors, and employees concerning the implications of the Arkansas Supreme Court's decision in the case of Caldwell vs. Joseph W. Vestal & Son. The article has been republished in at least one newspaper in the state.

Some physicians have hailed it as an overruling of Rule 21 of the Workmen's Compensation Commission. This interpretation would permit an injured workman unrestricted choice of the physician to treat his injury. The insurance carriers hold the opinion that this is not a correct interpretation of the decision of the court. Further they contend that the confusion, unless clarified, could influence adversely the harmonious relationship existing between physicians and carriers. They regretted the publicity.

The matter was brought to the attention of Mr. Paul Schaefer, executive secretary of the Arkansas Medical Society. He referred it to Mr. Eugene Warren our attorney.

Below is an excerpt from Mr. Warren's opinion expressed to Mr. Schaefer in a letter received

February 12, 1964: "The most that can be said of this decision is that a majority of the Arkansas Supreme Court found that the original two physicians to whom the employer referred the employee made an incorrect diagnosis and the physician selected by the employee made a correct diagnosis and therefore the employer was responsible for the payment of the bill. I think it is safe to say that under the present state of the law, the employee does not have uncontrolled right to select a physician of his own choice without the consent of the employer or the Workmen's Compensation Commission."

On March 2 at the office of the Workmen's Compensation Commission the court decision along with its implications was carefully considered by medical and insurance representatives of our Arbitration Commission with members of the W.C.C.

The consensus of the group was: (1) The decision does not affect Rule 21 of the W.C.C. (2) Further publicity of the above mentioned article without concomitant explanation of all the facts involved could only augment misunderstanding of the duties and privileges of employers, insurors, and physicians under our workmen's compensation law.

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#### TEACHING SEMINAR

University of Arkansas Medical Center Little Rock, Arkansas



## THE PAINFUL STIFF SHOULDER

Benjamin W. Drompp, M.D.\*

HE PAINFUL STIFF SHOULDER has long been a diagnostic and therapeutic problem to the physician. The mechanisms and etiology of the painful stiff shoulder following trauma has not presented nearly the problem as the same symptoms and signs in the patient in which trauma has not been incriminated as the etiological agent. Unfortunately, it has long been the custom of medical practitioners to abscribe the non-traumatic painful stiff shoulder to subdeltoid bursitis. In fact, this tendency is so well established that when one mentions bursitis; the first assumption is that the subdeltoid bursa, which is only one of the several dozen bursa in the human body, is the bursa under consideration. This has been unfortunate, for it is very rare that a true primary subdeltoid bursitis is the cause of a painful stiff shoulder. As a matter of fact, when a true subdeltoid bursitis is present it is almost always secondary to some other primary pathological condition in the shoulder.8 Duplay9 is commonly accredited with describing and differentiating between a primary arthritic process of the shoulder joint as contrasted to pathology of the soft tissue around the shoulder. He used the term "periarthritis" to designate lesions of the soft tissue structures around the shoulder which cause the patient to have a painful and stiff shoulder. Unfortunately, he considered that the subdeltoid bursa was the site of an inflammatory process which he believed was often the cause of the periarthritis.

The concepts of Duplay held until around the turn of the century when the introduction of x-rays in the diagnosis of bone and joint disorders demonstrated the presence of calcific deposits<sup>6</sup> in

Codman<sup>1</sup>, during the twenties, was the most influential of all workers in the field in understanding these many lesions of the soft tissues around the shoulder. He is remembered today for his introduction of Codman's exercises, the Codman's tumor (chondroblastoma) involving the head of the humerus and the "critical point" of Codman which is the site of the insertion of the supraspinatus tendon into the greater tuberosity. He studied the pathology of calcific deposits within the supraspinatus tendon, more clearly differentiated ruptures of the supraspinatus tendon and studied in great detail the problem of the stiff or frozen shoulder. Initially, he believed that the socalled "frozen shoulder" was due to an adhesive subdeltoid bursitis but when surgical exploration failed to reveal anything other than a normal state in the subdeltoid bursa, he then considered the lesion in this particular problem to be that of a tendonitis involving the entire rotator cuff. Undoubtedly, it is Codman's influence that incriminated the subdeltoid bursa as the primary cause of many shoulder disabilities. It is unfortunate that his later concepts of a tendonitis as a cause of the shoulder disability were not more widely disseminated.

Concurrent to Codman's investigations, another group of investigators<sup>3, 4, 5</sup> were examining

the region of the greater tuberosity and rotator cuff. This was the first step in further dividing and understanding all those lesions which were the cause of non-traumatic periarthritis or the painful stiff shoulder. Since this time there have been many workers interested in lesions of the shoulder and they have advanced our knowledge to the point where we are able to be more specific in the diagnosis and treatment of these lesions.

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the role of the tendon of the long head of the biceps, both in its intra and extra-articular areas. These investigations have resulted in still another group of shoulder lesions which are termed bicepital syndromes and, of course, account for some painful and stiff shoulders.

Thus, the periarthritis of Duplay can now be considered to be divided into at least five different well investigated pathological entities. These are: (1) calcific deposits in the rotator cuff of the shoulder; (2) ruptures of the rotator cuff; (3) bicepital syndromes; (4) secondary subdeltoid bursitis; (5) the stiff or frozen shoulder (supraspinatous tendonitis of Codman). Careful examination of the patient as well as use of adequate x-ray examination should permit the physician to make a more satisfactory diagnosis than that of subdeltoid bursitis.

#### Anatomy and Pathology

Examination of the shoulder is difficult because pertinent anatomy of the area is covered by the thick deltoid muscle. Since the deltoid obscures determination of the pathology underlying it, the examiner must learn to identify the underlying structures primarily by palpation through the deltoid. The principle features that can be identified by palpation are: (1) the greater and lesser tuberosities; (2) the bicepital groove with long head of the biceps tendon lying between the greater and lesser tuberosities; (3) the coracoid process; (4) the acromion; (5) the coraco-acromial ligament connecting the two structures; and (6) the head of the humerus itself which can be palpated and identified by rotating the shoulder. Posteriorly, atrophy of the supraspinatus and infraspinatus muscles can be observed and palpated. Some of these anatomical features are demonstrated in Fig. 1 which is schematic representation of the structures of the anterior shoulder area. One can easily visualize that in the position of more than the 90 degrees of abduction of the shoulder, there would be impingement of the greater tuberosity and the insertion of the supraspinatous tendon (the critical point of Codman) against the acromion and coraco-acromial ligament.2, 10

The basic pathological consideration in the painful stiff shoulder is that of collagen degeneration. This is a biochemical phenomenon not very well understood at present but may have considerable relationship to other degenerative phenomenon such as arteriosclerosis and degenerative

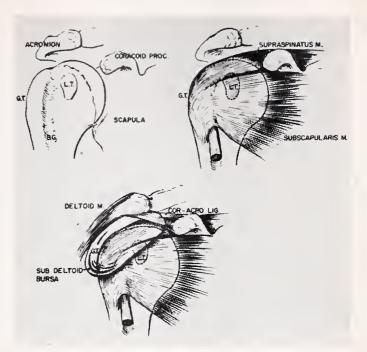


Fig. 1. Artist's sketch depicting bony landmarks of the shoulder joint and surrounding area with the important muscle attachments of the anterior aspect of the rotator cuff. The subdeltoid bursa is indicated beneath the deltoid muscle and its floor is seen to lie on the rotator cuff, greater tuberosity, lesser tuberosity and long head of the biceps tendon in the bicepital groove.

disease of the intervertebral disc. Degeneration of the collagen tissue can be demonstrated in all of the pathological entities of the painful stiff shoulder. This is obviously quite true in the tendonitis of Codman which precedes rupture of the rotator cuff. Collagen degeneration is present in the tendon of the long head of the biceps before or after spontaneous rupture and is thought to precede calcific deposits in the rotator cuff. This biochemical degenerative process is often followed by an inflammatory response which is responsible for symptoms of pain. In the case of calcific deposits within the rotator cuff, the inflammatory response is responsible for dissolution of the calcific deposits spontaneously, whether treated or untreated (Fig. 2). Attritional changes in the rotator cuff or the long head of the biceps tendon are often superimposed upon the degenerative changes and between the two, enough disintegration of the collagen fibers occurs to permit spontaneous ruptures of the structures. Thus, one may see patients in all stages of this degenerative process and depending upon the stage in which the patient is seen, there will be a variety of signs and symptoms presented.

#### Examination

As indicated above, the examiner with a good working knowledge of the anatomy of the shoul-



Fig. 2-A, 2-B. AP views of the left shoulder of 39 year old female with severe symptoms due to calcific tendonitis (acute) of the supraspinatous tendon. Fig. 2-A shows soft appearing calcific lesion (indicated by arrow) two weeks after onset of current acute exacerbation. Fig. 2-B shows reduction of size of calcific mass following injection of 5 cc's of 1% procaine solution containing 50 milligrams of hydrocortisone. Lesion at this time (indicated by arrow) has characteristics of the chronic calcification suggested by patient's prior symptomatic episodes.



der has a distinct advantage in the examination of the patients with the painful stiff shoulder. However, because of pain, the examiner will often be handicapped. In many instances, after initial examination and attempt at location of the primary pathology, it may be advantageous to inject the most painful areas of the shoulder with local anesthetic using sterile techniques. After this has been carried out, it may be much easier to examine the shoulder and to exactly pin point the area of major pathology. After the physician has carefully examined the shoulder, he is more certain to make the correct diagnosis of the lesion causing

the patient's symptoms. Significantly, alleviation of pain by local anesthetic injection is quite useful in determining if the patient has a tear (complete or incomplete) of the rotator cuff. If the pain is alleviated, the patient will be able to maintain the arm in 90 degrees of abduction fairly well even though he may be unable to initiate abduction to this position. For purposes of initial evaluation, injection of the local anesthetic should always be in the areas of maximum tenderness. Parenthetically, the injection of local anesthetic is often therapeutic.

Examination of the entire upper extremity as well as the shoulder itself is mandatory in evaluation of the patient with the painful stiff shoulder. Lesions of the cervical spine causing referred pain in the region of the shoulder must be considered and excluded by adequate examination including x-rays. The patient with pathology in the shoulder itself may have referred pain into the distal portions of the upper extremity and these symptoms must be taken into account and evaluated. Referred pain is common in the region of the deltoid insertion and the mid-humerus area in general. Realizing that the biceps humerus is the strongest supinator of the forearm, the examiner should test pronation and supination of the forearm and if forceful supination of the forearm causes pain in the region of the bicepital groove (Yergason's sign), this is further proof of a bicepital syndrome.

X-ray examination of the shoulder is essential. In addition to the routine antero-posterior view of the shoulder, the same view with the humerus in as much external and internal rotation as possible is necessary to visualize calcific deposits and the bony prominences of the head and neck of the humerus. Occasionally, trans-thoracic or axillary views of the neck of the humerus and shoulder joint are necessary. One must remember that adequate views of the shoulder may sometime be impossible because of the severe pain that the patient is experiencing and relief of the pain by injection of local anesthetic may permit better x-ray visualization of the shoulder. Calcific deposits in and about the supraspinatous tendon and the rotator cuff should be identified without too much difficulty. Occasionally a patient with trauma to the shoulder will present x-ray evidence suggestive of a calcific deposit but careful examination of the roentgenograms will demonstrate that a patient has actually avulsed the greater tuberosity where the supraspinatous tendon inserts into the humerus (Fig. 3). The calcific deposits may be identified as a chronic lesion by rounded borders and density, whereas the acute calcific deposit can be distinguished by the lack of well rounded and defined borders as well as a less dense appearance. The calcific deposit may be



Fig. 3. AP view of shoulder in a 38 year old male patient demonstrating greater tuberosity to have been avulsed from the humerus by the rotator cuff.

within the tendon itself or may have ruptured through the floor of the subdeltoid bursa and will be in the subdeltoid bursa space. Patients with long standing supraspinatous tendonitis without calcific deposition will often show erosion of the greater tuberosity itself and sclerosis of the remainder of the prominence of the greater tuberosity.

#### **Treatment**

Conservatism is the key to the rehabilitation of the patient with the painful stiff shoulder. There are certain indications for primary surgical treatment of certain pathological lesions but surgery is required in most lesions only after failure of a conservative regime. Furthermore, since the nontraumatic painful stiff shoulder is an affectation of the older age group and usually over the age of fifty, it is difficult to justify surgical treatment in a patient who will probably not place too many physical demands upon the shoulder, either in his vocational or avocational activities.

It has been said that the painful stiff shoulder, especially the frozen shoulder due to a supraspinatous tendonitis is a self limiting disease. However, most patients expect some amelioration

of their problem when they first consult a physician and this is most true of new patients upon initial consultation. As indicated above, local anesthetic injection in the shoulder for purposes of examination is also therapeutic and this, of course, will alleviate some of the patient's symptoms for a temporary period of time. It has been observed that local anesthetic injection into the point of maximum tenderness has been known to give relief of acute pain and to modify the pain for a period of two to three days even though no other form of therapy has been offered. This suggests that part of the pain exists as a pattern in which the use of local anesthetic has simply broken up a pain cycle of stimulus and reflex muscle spasm. Obviously, with the reduction of the amount of pain, the patient is often able to more actively use the shoulder and of course, will decrease the amount of stiffness by this physiological activity. There seems to be little reason to attempt to inject the local anesthetic into the joint itself.

Since an inflammatory response to the biochemical degeneration of collagen and attritional changes is the cause of the patient's acute exacerbations and most painful episodes, it would seem that a useful adjutant in the treatment of the painful stiff shoulder would be the use of the antiinflammatory properties of cortisone and related compounds. Since hydrocortisone is available as an intra-articular or intra-bursal injection material and remains localized without systemic effects it would seem preferable to inject the inflammatory area with this material. In actuality, it is common practice to combine injection of hydrocortisone (25 to 50 milligrams) into the most painful and inflamed area with 3 to 5 cc's of a 1% local anesthetic. This affords the patient immediate relief as well as prolonging relief of pain by reducing the inflammatory activity in the local area through the action of hydrocortisone. This technique of combination anti-inflammatory action of hydrocortisone and the local pain relieving qualities of the local anesthetic is effective in the conservative management of acute calcific tendonitis (as well as some amelioration of the chronic calcific tendonitis), the tenosynotear of the rotator cuff, the Irozen shoulder or supraspinatous tendonitis of Codman, and the secondary subdeltoid bursitis. This conservative treatment is wholly ineffective in the complete tear of the rotator cuff or the rupture of the long

head of the biceps.<sup>7</sup> These two entities require surgical treatment if the physiological demands upon the shoulder are such that a more powerful function of the shoulder is demanded.

Forceful manipulation under general anesthetic seems to be rarely indicated and has often been accompanied by rupture of the rotator cuff and tendon of the long head of the biceps as well as the intra-articular adhesions. This manipulation (often termed "brisément force") should be done with utmost care and be recommended only occasionally.

The role of X-ray therapy and ultra-sound therapy in treatment of shoulder lesions is equivocal and uncertain. In many cases their pain relieving qualities are certainly not as efficacious as the use of local anesthetics and these two modalities have become less popular to the discriminating clinician.

As suggested above, a complete rupture of the rotator cuff requires surgical repair and need only be done when there is justification, such as return to an activity requiring moderate to strong strength of the shoulder. Similarly, ruptures of the long head of the biceps will require surgical repair for those activities requiring strong function of the upper extremity. A laborer or farm worker would most certainly require surgical repair in either of these two problems but an office worker may not require this surgical repair unless his avocational interests require excellent function of the shoulder. In the event of the rotator cuff tear, repair of the lesion is carried out; however, the detached long head of the biceps is simply firmly attached to the bicepital groove and the intra-articular portion of the tendon is removed in the surgical treatment of complete rupture of the long head of the biceps tendon.3 Failure to respond to conservative management in the case of the inflammatory tenosynovitis of the long head of the tendon may also require the same surgical procedure. Calcific tendonitis of the rotator cuff, especially that of the supraspinatus portion, may require surgical intervention and removal of calcific deposits if there is a failure to conservative management. Transection of the coraco-acrominal ligament is important in the surgical treatment of calcific tendonitis and it has been more recently advocated that a partial acromionectomy<sup>2</sup> be performed for this disease process as well as the non-calcific tendonitis of Codman in order to remove from the area the point of impingement that may be responsible for the continued attritional changes within the rotator cuff. As a matter of fact, a transacromial approach (saber cut) is preferred in the surgical approach for repair of shoulder lesions. This will permit section and discard of the distal and offending portion of the acromion.

#### Summary

The non-traumatic painful stiff shoulder has been discussed from the viewpoint that it actually represents part of a generalized disease of collagen degeneration with an ill defined bio-chemical relationship. Since the degeneration is silent, the painful exacerbation that the patient suffers has been explained on an inflammatory basis. An adequate understanding of the anatomy of the area makes the establishment of the correct diagnosis relatively easy to the careful examiner. The conservative management of the painful stiff shoulder has been outlined with emphasis placed upon the lact that reduction of pain and amelioration of the inflammatory processes makes possible increased physiological activity of the shoulder and thus, recovery of normal function. The surgical aspects of treatment have been recommended only in special instances where conservative manvitis of the bicepital syndromes, the incomplete agement has failed or the circumstances are such that better than average function is required of the shoulder.

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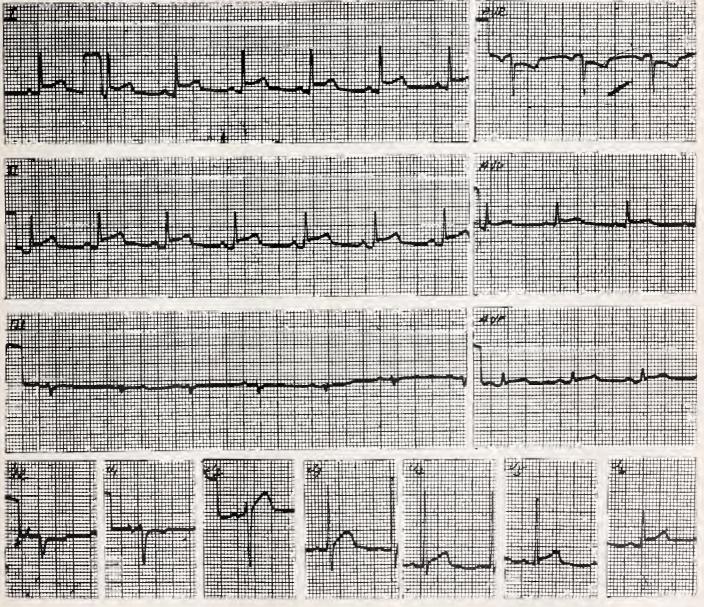
#### WHAT IS YOUR INTERPRETATION?

AGE: ? SEX M BUILD: MEDIUM BLOOD PRESSURE: not recorded

MEDICATION: None

HISTORY: Not obtainable.

#### **ANSWER ON PAGE 462**

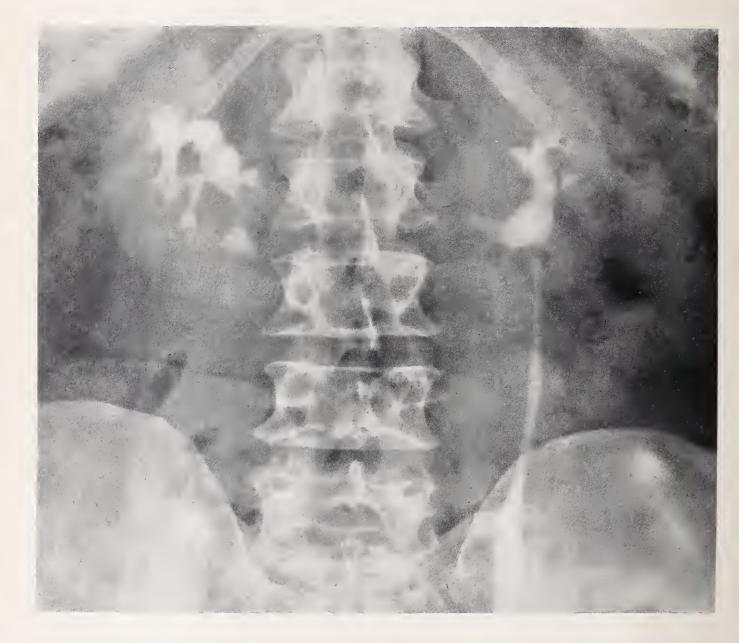


The Department of Medicine, University of Arkansas Medical Center
\*James S. Taylor, M.D., Professor of Medicine

#### WHAT IS YOUR DIAGNOSIS?

Prepared by the
Department of Radiology, University of Arkansas
School of Medicine, Little Rock

#### **ANSWER ON PAGE 462**



No. 14-40-76

56 year old white male

History:

The patient first noted a mass in the upper abdomen six years prior to admission. Physical examination revealed a four by ten centimeter, slightly tender mass in the left upper quadrant.



#### PUBLIC HEALTH AT A GLANCE

## THE MENTALLY RETARDED CHILD

Rex C. Ramsay, M.D.\*

Almost all children that are mentally retarded can be helped to improve and advance, even in our highly complicated society of today. They are not the lost children of yesterday but a part of our rapidly improving world. A large majority of these children can be taught to do useful work as an adult with supervision. Some can become self-sufficient enough to make their own way in life. However, these rewards can only come about if somebody cares enough to work with these children. The vast majority of parents

we have seen at the Child Development Center certainly care enough, but they need some form of guidance. They wander from doctor to doctor trying to find the medicine or surgery that will cure their child of this dreaded stigma called mental retardation. Of course, we know that in the vast majority of cases this is impossible. But, it is difficult for parents in this day of "modern miracles" to accept this fact. Even though parents are becoming less frightened of the word mental retardation, it is still difficult for them to accept it. It is much the same understanding as the basic philosophy of Alcoholics Anonymous. The

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CASES EVALUATED JANUARY 1, 1963 TO JANUARY 1, 1964.

parent must first recognize there is a defect in their child that needs their love and understanding. Some communities still appear to be more frightened of this field than the parents. Three out of every hundred children born are mentally retarded to one degree or another. Most of these children have a definite need for special education; yet, many communities still deny that they have any of these mentally retarded children. Some of these children continue to be kept in the home, away from the public eye. The mother usually first approaches the physician with the child to try and determine why the child is slower than the other children. She may describe her reason for coming to the doctor as only a checkup, hoping the physician will find an organic reason why the child is not equal to his siblings. This places the physician in a good position to help the educators realize how much of a need there is for special education classes in his own local community. After finally accepting that

their child is retarded and that this cannot be corrected, the parents begin to think that maybe their child would be much better in an institution. We, as physicians, know that there is no substitute for a good home environment for any child, retarded or not. Many children are in an institution at present because there are no facilities available in their home community. It is certainly the shame of a community when a child is deprived of his home simply because the community refuses to recognize a problem. Naturally, we all know that there are children that need institutional care; but these children are definitely in the minority. Out of the 450,000 children in the State of Arkansas, it is estimated that we have 1,000 custodial level, 3,000 trainable level, and 8,000 educable level children. We have no figure for the borderline children because they are seldom seen in diagnostic clinics. The Children's Colony at the present time can take care of 540 children. What is your community doing

	Preschool Age 0-5 Years Maturation Development	School Age 6-21 Years Training Education	Adult 21 Years and Older Social Vocational Adequacy
Level I IQ: 0-25 Custodíal Mental Age: To 4 years in adulthood	Gross retardation. Needs nursing care. Severely poor motor development.	Cannot profit from training in self-help. Needs total care.	Needs complete care and supervision. Some speech develop- ment.
Level !! IQ: 25-50 Trainable Mental Age: 4 to 7½ years in adulthood	Minimal speech. Poor motor development. Does not profit from self-help training.	Can talk and learn to communicate. Can be trained in some health habits. Cannot learn academic skills.	Can contribute partially to self-support under complete supervision. Can develop minimal self-protection skills.
Level III IQ: 50-75 Educable Mental Age: 7½ to 11½ years in adulthood	Can talk. Fair motor development. May be managed with moderate supervision.	Can learn academic skills to approximately fourth to fifth grade level with special education.	Self-maintenance in semi-skilled occupation. Always needs supervision and guidance under mild social or economic stress.
Level IV IQ: 75-85 Borderline Mental Age: 11½ to 13 years in adulthood	Rarely distinguished from normal until later age. Fair communication and motor ability.	Can learn academic skills to sixth or seventh grade levels. Needs special education, particularly at secondary school age level.	Capable of social and vocational adequacy with proper education and training. Frequently needs supervision and guidance

about its retarded children? The families we see at the Child Development Center have accepted the fact that their children may be mentally retarded. Otherwise, they would not be here. Many of these parents are extremely unhappy because they see no progress in their community toward resolving the problem of the retarded child. There are many sides to every child, and each one of these needs to be studied thoroughly to help the parents plan a future. Physical, social, and psychological evaluations must all be done thoroughly to determine the ability of a child. The educators of a community need to know when to begin the child's education and what subjects to concentrate on.

The following chart was taken from the American Journal of Mental Deficiency and is shown to give you an idea of the degrees of mental retardation and what to expect of each particular level as the child grows older.

The Child Development Center is centrally located in order to serve the entire state. We give

a complete evaluation to children under the age of eight years suspected of mental retardation. We would like to evaluate all of the children regardless of age. However, because of the extreme importance of early diagnosis and the need for parents to know how to plan for their children, priority is given to the preschool and early schoolage child. There is no charge for our services. We give the child the benefit of medical, psychological, and social diagnostic evaluations. Following the evaluation, the parents are counseled on what to expect from their child. They are given the opportunity to ask any questions of any meniber of the evaluation team. The pediatrician. social worker, and psychologist answer the questions in their own particular field. We spend a great deal of time with each family, which is necessary in order to plan their child's future. We evaluated 380 cases in 1963. We are gradually increasing the number of cases each year and hope to give more service as our staff increases.



#### Synthesis of Endogenous Cholesterol in Experimental Nephrosis

I. Goodrich (Medical College of Georgia, Augusta, Ga) and W. S. Harms, Metabolism 13:141 (Feb) 1964

To elucidate the mechanism of hypercholesterolemia in the nephretic syndrome, various tissues of rats with aminonucleoside-induced nephrosis were examined; these tissues were checked for incorporation or turnover rates, or both, of cholesterol lormation following intraperitoneal injection of labeled precursors. The experiment was divided into three parts: (1) Serum cholesterol formation utilizing sodium acetate labeled with radioactive carbon 14 (acetate C<sup>14</sup>) at various time intervals, the results indicated an increased cholesterol genesis in the early stages of nephrosis; (2) synthesis and deposition of cholesterol in various body tissues tripalnitin labeled with radioactive carbon 14 is utilized for both cholesterol fractions more efficiently than is acetate C<sup>14</sup> in certain nephrotic and normal tissues; (3) cholesterol turnover in the skin utilizing acetate C<sup>14</sup>—in nephrotic rats the cholesterol and cholesterol esters have shorter half-lives than in normal counterparts. Both the liver and skin may contribute to the nephrotic hypercholesterolemia.



## Response of the Abnormal Heart to Exercise

Alfred Kahn, Jr., M.D.

The practicing physician often tends to think of heart disease in terms of pathology instead of considering the altered physiology resulting from the pathological lesion. Harvey, Smith, Parker and Ferrer in a study entitled "The Response of the Abnormal Heart to Exercise" (Circulation, Vol. 26, p. 341, September 1962) point out that of two out of every three patients with cardiomegaly had abnormal cardiac function when a group of parameters were made before and after exercise.

In their studies, they measured ventricular rate, brachial artery pressure, pulmonary artery pressure, right ventricular pressure, oxygen uptake, stroke volume, ventilation, arterial oxygen content and saturation, etc., and related this to exertion. Patients were studied who had left ventricular failure, left and right ventricular failure, recovered heart failure and heart disease with no history of failure. They demonstrated that at best all patients with ventricular failure had "an elevated pressure in the affected ventricle and reduced cardiac output. The response during exercise varies from greatly compromised to being well preserved." The authors point out in these patients with abnormal hearts there is a spectrum of functional performance of the ventricle. Actually, this was graphically demonstrated by them by plotting cardiac output against ventricular diastolic pressure showing the variation from eupyesic (normal pressure) and eukinetic (normal flow at rest and exercise to hyperkeresic hypokinetic at rest with hyperpysesic and akinetic response to exercise; the former normal condition is charted as an almost vertical line and the latter as horizontal - between these two extremes are shown four intermediate stages.

Among the clinical implications of this research is the fact noted above that two of every three patients with cardiomegaly had an abnormal cardiac response to exercise. Harvey postulates that this may be the stimulus for saltwater retention, hypervolemia, and increased ventricular size. From their data, they suggested once congestive failure is present, bed rest is strongly indicated, as exercise may perpetrate the congestion; "hypervolemia may exist without edema, and may be the last of the clinical signs of congestive heart failure to disappear, its presence should stimulate continuance of a rigorous medical regimen." Also of considerable interest is their finding that heart rate does not give any important clue as to the other parameters of cardiac function. Patients with auricular fibrillation and without evidence of congestive heart failure at rest showed an abnormal response to exercise. Patients with only left ventricular failure could augment their blood flow although this was less than normal. Patients with right and left ventricular failure showed the maximum abnormalities.

The author's charts demonstrate the points enumerated above. Thus, in 5 patients with left ventricular failure the pulmonary artery pressures were high before exercise and rose after exercise, for example, in one patient: resting mean pressure: 16 mm Hq, after exercise; 35 mm, 33 mm, etc; in this patient the cardiac index was 2.36 liters per minute per square meter of body surface, while after exercise it was 4.16 L/M/M2BSA. In a normal patient by contrast, the mean pulmonary artery pressure of approximately 10 mm at rest went up to only 17 mm with exercise while the cardiac index rose from three to over four.

Among a group of patients with left and right ventricular failure, there was one case with a mean pulmonary artery pressure of 23 mm before exercise with a rise to 45 mm afterwards, the cardiac index rose from 2.67 to 3.80; another case with an initial pulmonary artery pressure of 40 mm showed a rise after exercise and in the mean-

time the cardiac index fell from a low ligure of 1.25 to an even lower 1.18.

All in all this is a most provocative paper, and vividly points out the wide spectrum of pathophysiological response of the abnormal heart to an exercise load.

# MEDICINE IN THE VENS

#### **Rural Community Improvement Winners Honored**

The RCI, which is designed to help eliminate rural poverty in Arkansas, held its annual meeting Thursday at Hotel Marion. The climax was an awards program for the winners of the RCl competition. Cash prizes were given to the district winners that have competed less than three years, but the older clubs received plaques. A health and safety program was one of the main projects of the year. Special phases included well testing, rat control, chest X-rays, and polio vaccinations. All the dogs in the community were vaccinated against rabies. Goshen, Calamine, Cole Corner, Trinity and Promised Land were winners in their districts of the health award of the Arkansas Medical Society. Dr. Ben Saltzman, treasurer of the Society, represented the organization.

#### University of Arkansas Research Forum

Graduate and medical students at the University of Arkansas Medical Center planned a wideranging research forum Saturday (March 21st) as a culmination of a year's work and study under the Center's Research Program. Subjects of papers which the students presented ranged from effects of radiation on growth of the nervous system in the developing young, to a study of the role of fat in body functioning.

#### THE MONTH IN WASHINGTON

Washington, D. C.—The federal government is requiring assurances from sponsors of pending future Hill-Burton hospital projects that there will be no racial discrimination as to either patients or physicians.

Anthony J. Celebrezze, secretary of Health, Education and Welfare, disclosed the new policy in testimony before the House Commerce Committee during testimony on legislation that would enlarge the Hill-Burton program and extend it for five more years.

His testimony came a week after a Supreme Court decision that let stand an anti-segregation order against two Greensboro, N. C., hospitals.

Following the action by the Supreme Court, Celebrezze said, "I directed that the following additional steps be taken:

- "(1) That we make permanent the earlier decision to approve no new applications under the 'separate but equal' provision of the (Hill-Burton) law;
- "(2) That we require a nondiscrimination assurance in admittance from those pending projects previously approved on a 'separate but equal' basis;
- "(3) That we seek from all pending projects an assurance that there will be no discrimination on the basis of race, creed, or color in granting

staff privileges: and

"(4) That the application forms to be used hereafter be amended to require of all applicants whose application has not been finally approved, a nondiscrimination assurance covering staff privileges and admissions, and that all portions and services of the facilities be made available without discrimination on account of race, creed or color."

Celebrezze also said that consideration was being given to calling a meeting of the leaders in organized medicine, in the hospital and related health fields, with a view toward implementing non-discrimination programs voluntarily. "I would hope that such a voluntary program would encompass not only Hill-Burton hospital facilities but all hospitals in the United States," he said.

The Supreme Court's "let stand" ruling foreshadowed a hospital desegregation drive throughout the south.

A spokesman for the National Association for the Advancement of Colored People, said hospital desegregation lawsuits were planned for a number of other southern cities. A spring trial already has been scheduled on a complaint against Grady Memorial Hospital in Atlanta, the largest public hospital there. Another suit involved a hospital in Newport News, Va.

The Supreme Court let stand a decision handed down Nov. 1, 1963, by the Fourth U. S. Circuit Court of Appeals which held that hospitals built with Hill-Burton funds could not practice racial segregation as to both doctors and patients despite the "separate but equal" provision in the Hill-Burton act of 1946.

The Supreme Court issued only a brief order, with no explanatory opinion.

Eleven negro doctors, dentists and patients brought suit against the Wesley Long Community and Moses H. Cone Memorial hospitals in Greensboro federal district court in 1962. The negro litigants petitioned for an anti-segregation order and for elimination of the "separate but equal" provision in the law.

The issue was whether participation by the State or Federal government, or both, brings government into the picture sufficiently to invoke the protection to individuals guaranteed in the U. S. Constitution. The guarantee of "equal protection of the laws" laid down in the 14th amendment, and other constitutional rights, may be enforced only against governments, not against private individuals.

#### ANSWER-Electrocardiogram of the Month

RATE: 80 RHYTHM: Sinus

PR: .18 sec. QRS: .09 sec. QT: .36 sec.

INTERPRETATION: Abnormal. Acute injury current (pericarditis) mostly anterior surface.

COMMENT: Patient suffered stab wound in chest. The electrocardiogram is extremely useful in detecting injury to the heart, whether penetrating, as in this case, but also from blunt force. ST-T changes such as present here should suggest the possibility that tamponade from hemorrhage may develop.

#### ANSWER-What is Your Diagnosis

Diagnosis: Horseshoe kidney

X-Ray Features: The long axes of the kidneys are reversed so that the lower poles are nearer the midline than the upper poles. On the left there is an associated rotation anomaly with the calyces directed posteromedially rather than laterally. Some degree of mal-rotation is also present on the right. The lower poles of the kidneys are joined across the midline.

The district court at Greensboro dismissed the suit of the negroes but it was overruled by the circuit court of appeals which held that the degree of state and federal involvement is sufficient under the Hill-Burton Program to bring the hospitals within the framework of constitutional requirements. This opinion noted that the United States had appropriated more than \$1.2 million to Cone Memorial and almost \$2 million to Wesley Long.

"The massive use of public funds and extensive state-federal sharing in the common plan are all relevant factors," the circuit court said.

At the time the suit was filed, Cone Memorial did not afford Negro doctors and dentists staff privileges and admitted only a few Negro patients. Long Hospital was completely segregated. Both are non-profit charitable corporations under North Carolina law.

Later, Cone Hospital announced it would consider staff applications from Negroes.

President Johnson asked Congress to approve a program of lederal aid to nursing education with a goal of increasing the nation's supply of professional nurses to 680,000 by 1970, an increase of 130,000.

In a special health message to Congress, Johnson also requested an extension of the Hill-Burton hospital construction program and again called for legislation that would increase social security taxes to provide hospitalization and other limited health care for the aged.

Dr. Edward R. Annis, president of the American Medical Association, termed the "fedicare" section of the president's health message as "a remarkable document of inconsistency and misinformation on health care for the elderly."

"Mr. Johnson declares that elderly Americans should not be subjected to a test of need for tax-paid medical care, but at the same time he urges all states to enact adequate Kerr-Mills medical aid for the aged programs," Dr. Annis said. "Eligibility for Kerr-Mills benefits is based on need...

"Mr. Johnson claims that the average worker would pay no more than a dollar a month to pay for this program of hospitalization for the elderly. But the average industrial wage in this country is more than \$100 a week, and the tax increase proposed by Mr. Johnson would cost the \$100 a week worker \$27.50, not \$12. Employers would pay an additional \$27.50 for a total payroll tax

increase of \$55 on every \$100 in wages. And that would be only the beginning.

"Why should everyone over 65 get hospitalization at the expense of wage earners just because a few need help? Why should the workers of America be forced to pay higher taxes for hospitalization for everyone over 65, many of whom are wealthy and millions of whom have health insurance, just because they've had a birthday?

The AMA vigorously opposes the Administration's program that would be financed through social security, but supports the Kerr-Mills program which was enacted into law in 1960.



#### Arkansas Breakfast

The seventh annual Arkansas Breakfast given by Arkansas physicians in honor of the officers and members of the House of Delegates of the American Medical Association is scheduled Monday morning, June 22nd in the Gold Room of the Fairmont Hotel in San Francisco. This is the opening event of the annual meeting of the American Medical Association and is attended by 300 to 400 people. It has been referred to as the most outstanding public relations event given by any state in the union.

The presiding officer will be Dr. C. Randolph Ellis, President, Arkansas Medical Society, and the entertainment will be furnished by MISS AMERICA, (Donna Axum of El Dorado, Arkansas) whose accompanist will be Mrs. Dorothy Gray of Batesville, Arkansas. Mrs. Gray, wife of Dr. Paul Gray of Batesville, is President, Woman's Auxiliary of the Southern Medical Association this year. The speaker will be former Congressman (Dr.) Walter Judd of Minnesota whose subject will be "The Doctor in Public Affairs." Dr. Judd is a former missionary to China and was the keynote speaker at the 1960 Republican National Convention and is presently a member of the Judicial Council of the AMA, which is called "The Supreme Court of American Medicine."

All Arkansans who are in attendance at the AMA meeting are requested to be present and serve as host or hostess at the event.

This Arkansas breakfast is supported by tax-deductible voluntary contributions and contributions may be sent to "The Arkansas Breakfast Fund," P. O. Box 128, Caniden, Arkansas. Physicians who have not already sent a contribution are requested to do so at the above address.

#### Ninth Annual JESSI

JESSI (Junior Engineers' and Scientists' Summer Institute) is a 13-day exploration and orientation in the science and engineering areas of learning. The institutes are held on college and university campuses during the summer. JESSI is an activity which is designed to help remove the "Guess" from school and college program and career decisions by giving interested entering 11th and 12th grade high school students an academic insight into pure and basic applied sciences, and some knowledge of the study programs and career opportunities in the science and engineering fields.

The 1964 JESSI institutes are scheduled during the months of June, July, and August. The institute at Lamar State College of Technology, Beaumont, Texas, will be scheduled for July 26 through August 8. This 2nd Annual institute will be open to boys and girls. The admission fee is \$105.00.

## Annual Meeting of the American Academy of Physical Medicine and Rehabilitation

The Annual Meeting of the American Academy of Physical Medicine and Rehabilitation will be held on August 24-27, 1964, at the Statler-Hilton Hotel, in Boston, Massachusetts. It will consist of formal lectures, as well as educational seminars in the field of Disability Evaluation, Forensic Physiatry, and Muscle Diseases.

#### Florida Diabetes Association Seminar

The Florida Diabetes Association will conduct its annual Seminar on Diabetes and Related Endocrine Disorders September 30, and October 1st and 2nd, 1964, at the Balmoral Hotel, Miami Beach, Florida.

## Action of Visible and Ultraviolet Light on Human Skin

A symposium will be held at Alumni Hall, New

York University Medical Center, 550 First Avenue, New York 16, New York, on May 4-6. This symposium will present recent advances in basic science and clinical knowledge of the action of light on the human skin. It will be of interest to all physicians and biologists who are concerned with the beneficial and harmful effects of ultraviolet and visible light in man.

## Spring Clinical Conference Scheduled At Medical Center May 20-21

"Clinical Advances in Medicine and Pediatrics" is the theme of the annual Spring Clinical Conference to be held at University of Missouri Medical Center May 20-21. A special feature of this year's program will be case presentations and round table discussions for small groups. These informal sessions will follow the afternoon programs and will provide for discussions of particular cases with members of the University faculty and visiting speakers.

The conference will open with a program accenting recent advances in cardiology. Speakers will include Dr. William E. Conner, associate professor of Medicine, at the State University of Iowa. Endocrinology is the subject for that afternoon with Dr. Don Pickering, professor of Pediatrics at Tulane, as the guest speaker.

"Psychiatric Emergencies in Medical Practice" is the topic for the second morning with Dr. James M. A. Weiss, professor and chairman of Psychiatry at the University of Missouri School of Medicine, leading this presentation. Dr. Paul Seebaum of the faculty at Iowa will speak during the afternoon's program on gastroenterology.

Inquiries regarding the program or reservations for the conference should be directed to:

Gail Bank, Executive Director of Postgraduate Medical Education, M176, University of Missouri Medical Center, Columbia.

#### The 6th World Medical Assembly in Israel

The American Physicians Fellowship, an organization of 3,100 physicians who are non-resident fellows of the Israel Medical Association, announces that the Israel Medical Association will conduct its 6th World Assembly in Haifa, Jerusalem and Tel-Aviv, Israel from August 2 to August 14, 1964.

## Twelfth Annual Clinical Meeting To Be Held In Florida

Interest in the health of women and their unborn babies is growing rapidly among all segments of the general public and paramedical professions. About 3,000 persons to whom this subject is of primary concern will gather for the forthcoming Twelfth Annual Clinical Meeting, at the Americana Hotel, Bal Harbour, Florida, May 17-22, 1964.





#### PERSONAL AND NEWS ITEMS

#### **Brinkley Doctors at Mid-South**

Three Brinkley doctors attended the Mid-South Postgraduate Medical Assembly in Memphis in February. They were Dr. N. C. David, Dr. J. P. Williams and Dr. M. L. Dalton.

#### Dr. Guenthner Attends Meeting in Chicago

Dr. John F. Guenthner of Mountain Home, a member of the Arkansas State Medical Board, attended the annual meeting of the Federation of Medical Boards at Chicago in February. The federation meeting was held in conjunction with the 60th Annual Congress on Medical Education sponsored by the American Medical Association.

#### Dr. Hayden Attends Postgraduate Conference

Dr. William F. Hayden of Forrest City attended a postgraduate conference on pediatrics at the University of Arkansas Medical Center in February.

#### Dr. Manley Attends Seminar

Dr. Robert H. Manley of Clarksville went to New Orleans in February for a meeting of the American College of Cardiology.

#### Conway Physicians at Memphis Meetings

Dr. John W. Sneed, Jr., attended a meeting of the Ophthalmology and Otolaryngology Society in Memphis in February.

Dr. C. A. Archer, Jr., and Dr. Robert Benafield were among Arkansas registrants at the Mid-South Postgraduate Medical Assembly in Memphis in early February. Dr. Archer presided at one session of the meeting as a vice president.

#### Radiologist Locates at Huntsville

Dr. J. H. McAlister, formerly of Odessa, Texas, has moved to Huntsville for the practice of radiology. He will be on the staff of the Madison County Hospital.

#### **Doctors Head Workers For Goldwater**

Dr. Edwin F. Mathis of Little Rock and Dr. Berry L. Moore, Jr. of El Dorado have been named chairmen of the National Draft Goldwater Movement in their respective congressional districts.

#### Van Duyn Clinic Adds Doctor to its Staff

The association of Dr. John P. Bethell, Jr., with the Van Duyn Clinic in Stuttgart was announced in February. Dr. Bethel is a native of Des Arc and attended high school there. He was graduated from the University of Arkansas Medical School in 1959 and served his internship at the Medical Center in Little Rock. He served a three-year residency in internal medicine and recently completed postgraduate work in obstetrics and gynecology.

#### New Clinic in Hughes

Dr. R. S. McGinnis has a new 12-room clinic building in Hughes which is located on the access road of Highway 70 near the south Hughes city limits. Offices are provided for two doctors but at the present time Dr. McGinnis will be practicing alone.

#### Dr. Wilson Re-elected Chief of Staff

Dr. Carl Wilson of Fort Smith was re-elected chief of staff of Sparks Memorial Hospital at a meeting in January. Dr. R. J. Thompson was elected vice chief of staff and Dr. D. J. McMinimy was elected secretary.

#### New Physician at Calico Rock

Dr. John M. Grasse, Jr., has joined the staff

at the Medical Center in Calico Rock. He has just returned from Nigeria where he operated a 77-bed hospital for three years. Dr. Grasse is a surgeon.

#### St. Bernard's Hospital Staff

Dr. Eldon Caffery was elected chief of staff by doctors at St. Bernard's Hospital in Jonesboro. Dr. Warren M. Douglass is vice chief of staff and Dr. M. O. Peeler is secretary-treasurer. Announcement was made of the election of three department staff heads: Dr. Gus Craig, medicine; Dr. B. P. Raney, obstetrics; Dr. Paul Stroud surgery.

#### **Doctors Speak Against "Medicare"**

The Administration-sponsored, King-Anderson Legislation was labeled unsound and unneeded by Dr. Robert Benafield at a meeting of the Conway Kiwanis Club in January. Dr. L. L. Duncan of Texarkana discussed the dangers of the proposed legislation at a January meeting of the Texarkana Rotary Club.

#### Dr. Parker Receives Distinguished Service Award

Dr. Lee Parker, Jr., has been named the outstanding young man in McGehee for 1963. He was presented the Distinguished Service Award at the Junior Chamber of Commerce banquet in January. Dr. Parker received the award on the basis of his outstanding work with the recent hospital drive in Desha County. He is president of the Desha County Medical Society, secretary of the Southeast Arkansas Medical Association and serves on the Board of Directors of the Arkansas Academy of General Practice.

#### Award Goes to Dr. Wren

Dr. Herbert Wren III was recognized as a person who devotes himself to the services of others when he was presented the Jaycees' Distinguished Service Award at an annual banquet of the Texarkana Junior Chamber of Commerce in January. Dr. Wren's father was the winner of the first such award given. Dr. Wren is active in the First Methodist Church, he spends his days off teaching on the medical staff at the University of Arkansas Medical School, is an active member of the Texarkana Kiwanis Club, team physician for the Arkansas High football team and is currently president of the Bowie-Miller Heart Association. These, and numerous other activities, were responsible for his receiving the award.

#### Five Physicians Honored

Five Arkansas physicians have been honored by the American College of Physicians. Elected as fellows were Drs. Arthur Haut, Kerrison Juniper, Jr., and Winston Shorey, all of Little Rock, and Dr. Charles A. Thompson of Texarkana. Dr. Robert T. Bullock of Little Rock was selected as an associate.

#### **Medical Center Announces Two Appointments**

The University of Arkansas Medical Center has announced the appointment of Dr. Ferdinand E. Greifenstein as chairman of the Division of Anesthesia. Dr. Greifenstein comes to Arkansas from Wayne State University College of Medicine where he was professor and chairman of the department of anesthesiology.

Dr. Donald H. Pellar has been appointed to the newly created staff position of assistant professor in the Division of Neurology. Dr. Pellar will have charge of the electroencephalogram and electromyogram laboratories. Dr. Pellar served fellowships in the departments of neurology and neurophysiology at the Mayo Foundation prior to coming to Arkansas.

#### **Doctor Shannon Lectures**

Dr. Robert F. Shannon, instructor in psychiatry at the University of Arkansas School of Medicine, spoke on "Are We Creating Problems in Adolescents" at a Little Rock PTA meeting in January. He also marked the beginning of the 1964 lecture series sponsored by the Washington County Mental Health Association with a lecture on "Mental Health Planning" in Fayetteville in January. Dr. Shannon is a graduate of the University of Arkansas School of Medicine and served a residency in psychiatry at the University Medical Center. He is presently in charge of the Adolescent Out-Patient Clinic at the Center, and is consultant at the Arkansas Industrial School for Girls.

#### Fort Smith PTA Hears Talk by Dr. Krock

Dr. F. H. Krock of the Holt-Krock Clinic addressed the January meeting of the PTA Association of the First Lutheran Church School. His subject was "Approaches to Sex Education."

#### Dr. Dildy Leaving Private Practice

Dr. Hal Dildy of Little Rock, Arkansas, is leaving private practice as of April 1, 1964, to assume a full-time position in Industrial Medicine with the Dow Chemical Company. He will work at

the plant in Rocky Flats, Colorado. His family will join him early in June and they will reside in Boulder, Colorado.

Dr. McCurry Attends Missouri Meeting

Dr. J. H. McCurry, Secretary of the Fifty Year Club of American Medicine, was guest at a luncheon of the 50 Year Club of Missouri, held March 9th in St. Louis in connection with the Annual Session of the Missouri State Medical Association.



#### Dr. David W. Sinton

DR. SINTON, 39, professor and head of the Department of Neurology at the University of Arkansas Medical School, died January 23, 1964, as a result of multiple injuries which he received in a fall at his home.

He was a native of Colorado and attended Colorado College in Colorado Springs from which he received a B.A. degree in 1945. He was graduated from the University of Colorado Medical School in 1947. Dr. Sinton practiced in Albany, New York, prior to joining the staff of the University Medical Center.

He is survived by his widow, Dr. Eleanor Sinton, also on the Medical Center Staff, and seven children.



## Hydroxocobalamin and Cyanocobalamin in Addisonian Anemia

J. L. Withey (Royal Infirmary, Cardiff, Wales) and G. S. Kilpatrick *Lancet* 1:16 (Jan 4) 1964

Of eight patients with addisonian anemia four were given four injections of 1,000  $\mu$ g of cyanocobalamin (B<sub>12</sub>) and four were given four injections of hydroxocobalamin on alternate days. No further vitamin-B<sub>12</sub> therapy was given until the serum vitamin-B<sub>12</sub> level fell below an arbitrary figure of 150  $\mu\mu$ g per ml. The four patients received hydroxocobalamin exhibited higher initial serum vitamin-B<sub>12</sub> levels and maintained higher levels for a longer time than those on cyanocobalamin. The greater binding capacity of hydroxocobalamin than of cyanocobalamin to serum was confirmed.



#### PROCEEDINGS OF SOCIETIES

#### **Bradley**

Dr. W. C. Whaley was elected president of the Bradley County Medical Society at a meeting in January. Other officers are: Dr. James W. Marsh, vice president; Dr. George F. Wynne, secretary. Dr. Wynne was also named as the county delegates to the state meeting.

#### Lafayette

Two new pieces of needed hospital equipment have been recently purchased for the hospital at Lewisville by the Lafayette County Medical Society. Items purchased were a new Bennett Positive Pressure Machine and a CO2 machine for the laboratory. Purchase of the equipment was made possible by donations of the people of Lafayette County during the administration of the Sabin Oral Polio Vaccine.

#### Nevada

Dr. Charles Hesterly was elected president of the Nevada County Medical Society at a meeting in Prescott in January. Dr. L. J. Harrell was elected vice president and Dr. Glenn Hairston was named secretary. Dr. Hesterly was selected to serve as delegate to the state convention, with Dr. Harrell as alternate.

#### Ouachita

Dr. Allen Gentling, Chief of Anesthesia at St. Vincent's Hospital in Little Rock, was guest speaker at the January meeting of the Ouachita County Medical Society.

#### Crawford

At the regular monthly meeting of the Crawford County Medical Society held in January, Dr. M. C. Edds of Van Buren was elected to the office of president. Dr. R. L. Calaway was elected

vice president and Dr. Jack Thicksten was reelected secretary-treasurer.

#### Craighead-Poinsett

Dr. Francis Murphey of Memphis, neurosurgeon, addressed the Craighead-Poinsett County Medical Society at its February meeting. His topic was "Evaluation of Cerebral Vascular Surgery." Dr. Murphey is vice chairman of the American Board of Neurological Surgery and professor of neurosurgery at the University of Tennessee.



DR. C. E. RIPLEY is a new member of the Ashley County Medical Society. A native of Warren, Arkansas, he received his pre-medical education from Arkansas A & M College. His M.D. degree was received from the University of Arkansas School of Medicine in 1960. He practiced at Poplar Bluff, Missouri for two years. His office is now located at the Crossett Health Center in Crossett, Arkansas. Dr. Ripley is a general practitioner.

Sevier County Medical Society announces that DR. WALKER DOUGLAS GOODIN is a new member. He was born at Indianapolis, Indiana, and he received his preliminary education from Indiana University and DePauw University. In 1962 he received his M.D. degree from Indiana University School of Medicine. Dr. Goodin is a general practitioner with his office at 4th and Heynecker in DeQueen, Arkansas.

A new member of Craighead-Poinsett County Medical Society is DR. S. D. COKER. He is a native of Little Rock, Arkansas, and he received his pre-medical education from Tulane University. He received his M.D. degree from Tulane Medical School in 1957. His specialty is obstetricsgynecology. Dr. Coker's office is at 806 Jeter Drive in Jonesboro, Arkansas.

Craighead-Poinsett County Medical Society announces that DR. GLEN F. BAKER has been added to its roster of members. Born at Grubbs, Arkansas; he received his preliminary education from the University of Arkansas. His M.D. degree was received from the University of Arkansas School of Medicine in 1959. Dr. Baker's office is at St. Bernard's Hospital. He is a pathologist.

DR. BRUCE IVY, JR., is a new member of Craighead-Poinsett County Medical Society. He is a native of Osceola, Arkansas, and his pre-medical education was obtained at Memphis State University. In 1957, he received his M.D. degree from the University of Tennessee. His specialty is obstetrics-gynecology and his office is at the Medical Arts Clinic-Hospital in Lepanto, Arkansas.

DR. JOHN D. SMOOT is a new member of the Craighead-Poinsett County Medical Society. A native of Knoxville, Tennessee, he received his preliminary education from Davidson College at Davidson, North Carolina. His M.D. degree was obtained from the University of Tennessee in 1959. His office is now located at 224 East Matthews in Jonesboro, Arkansas. Dr. Smoot's specialty is radiology.

A new member of Mississippi County Medical Society is DR. HERBERT JONES. He was born at Memphis, Tennessee, and he received his premedical education from the University of Tennessee at Knoxville. In 1959, he received his M.D. degree from the University of Tennessee Medical School. Dr. Jones' specialty is internal medicine and his office is at 529 North 10th Street in Blytheville.

Mississippi County Medical Society announces that DR. CHARLES C. BROCK, JR., is a new member. He is a native of Clarksdale, Mississippi, and he received his preliminary education from Vanderbilt University. In 1952, he received his M.D. degree from Vanderbilt University. He practiced at Tutwiler, Mississippi, from 1953 until 1960. Dr. Brock's office is now at 527 North Sixth Street in Blytheville, Arkansas. His specialty is internal medicine.

A new member of White County Medical Society is DR. J. GARRETT KINLEY. He is a native of Little Rock and he received his preliminary education from Hendrix College at Conway, Arkansas. He received his M.D. degree from the University of Arkansas Medical School in 1962. Dr. Kinley is a general practitioner and his office is at 401 Center in Beebe, Arkansas.

DR. LONNIE FRANKLIN LEONARD is a new member of White County Medical Society. He was born at Batesville, Arkansas, and his premedical education was received at Washington University at St. Louis, Missouri. In 1959, he received his M.D. degree from the University of Arkansas School of Medicine. His office is at 910 East Race in Searcy, Arkansas. Dr. Leonard is a general practitioner.

Lawrence County Medical Society announces that DR. BOB G. SMITH is a new member. A native of Imboden, Arkansas, his pre-medical education was received from Memphis State University. His M.D. degree was received from the University of Arkansas Medical School in 1962. He served in the U. S. Navy from 1951-1955. Dr. Smith is a general practitioner with his office in the Medical Arts Building in Walnut Ridge, Arkansas.

A new member of Arkansas County Medical Society is DR. JOHN P. BETHELL, JR. He was born at Brinkley, Arkansas, and received his premedical education from the University of Arkansas. In 1959, he received his M.D. degree from

the University of Arkansas Medical School. His specialty is internal medicine and his office is at 1204 South Buerkle in Stuttgart, Arkansas.

LUTHER J. STRICKLAND is a new member of the Lonoke County Medical Society. He was born at Holdenville, Oklahoma, and received his preliminary education at Wewoka, Oklahoma. His M.D. degree was received from the University of Oklahoma Medical School in 1961. Dr. Strickland is a general practitioner and his office is located at 520 N. E. 4th Street in England, Arkansas.

Logan County Medical Society announces that DR. GEORGE W. SMILEY has been added to its roster of members. A native of Iowa City, Iowa, he received his pre-medical education from Grinnell College in Grinnell, Iowa. His M.D. degree was received from the State University of Iowa in 1944. His specialty is diseases of the chest. He practiced in Astoria, Oregon, from 1947 until 1952; in Iowa from 1952 until 1963; and has been at State Sanatorium, Arkansas, since 1963.

DR. ROBERT H. McCOLLUM is a new member of Benton County Medical Society. He is a native of Little Rock and he received his preliminary education from Arkansas State Teachers College at Conway, Arkansas. In 1962, his M.D. degree was received from the University of Arkansas Medical School. His office is located at the Gravette Medical Center in Gravette, Arkansas. Dr. McCollum is a general practitioner.

A new member of Saline County Medical Society is DR. ROBERT EUGENE JONES. He is a native of Bauxite, Arkansas, and his premedical education was obtained from Tulane University. His M.D. degree was received from the University of Arkansas Medical School in 1951. He has practiced in the following places: Benton, Arkansas; Morristown, Tennessee; Texarkana, Texas; El Campo, Texas; and Marshall, Texas. Dr. Jones' office is located at 225 South Market Street in Benton, Arkansas. He is a general practitioner.

DR. JAMES CLAUDE BETHEL has been added to the roster of members of Saline County Medical Society. He was born at Pittsburgh, Pennsylvania, and received his pre-medical edu-

cation from the University of Arkansas. In 1954, he received his M.D. degree from the University of Arkansas School of Medicine. He practiced at Piggott, Arkansas, from 1955-1956; at Bauxite, Arkansas, from 1956-1961; at Winston-Salem, N. C., from 1961-1963, and at Benton, Arkansas, from 1963 until the present. He is a general practitioner. Dr. Bethel's office is located at 221 East Sevier, Benton, Arkansas.



#### BOOK REVIEWS

DISEASES OF THE HEART AND BLOOD VESSELS, Sixth Edition, by The Criteria Committee of the New York Heart Association, pp. 463, illustrated, published by Little, Brown and Company, Boston.

This is a well organized brief book doing exactly as the title states, outlining the nomenclature and criteria for diagnosis of diseases of the heart and blood vessels. It is a small reference book rather than a text; in this capacity it is recommended.

MODERN CLINICAL PSYCHIATRY, Sixth Edition, by Arthur P. Noyes, M.D., Director, Psychiatric Education, Pennsylvania Department of Public Welfare, formerly Superintendent, Norristown State Hospital, Norristown, Pennsylvania, and Lawrence C. Kolb, M.D., Professor and Chairman, Department of Psychiatry, College of Physicians and Surgeons, Columbia University. Director, New York State Psychiatric Institute and Psychiatric Service, Presbyterian Hospital of New York, pp. 586, published by W. B. Saunders Company, Philadelphia and London, 1963.

This is a well written book in its field and is certainly to be considered above average. The book is well indexed and has excellent bibliographies at the end of the chapters. In addition to purely psychiatric disorders, it considers mental disorders produced by injuries, metabolic disturbances, degenerative disease, etc. The type and setting is easy to read. This book is recommended to medical students and practicing physicians as an excellent textbook of its kind.

TRANSPLANTATION: Edited for the Ciba Foundation by G. E. W. Wolstenholme, O. B.E., M. A. M. B., M. R. C. P. and Margaret P. Cameron, M. A., illustrated, pp. 426, published by Little Brown and Company, Boston, Massachusetts.

This is a rather technical discussion of research pertaining to the transplantation of tissues. Although there are many clinical applications, this book pertains mainly to experimental work largely in the field of Immunology. This book has very little value to the practicing physician, but it will be of the greatest interest to the research worker in this field. This is a Ciba Foundation Symposium and it is well edited, adequately illustrated, contains references and charts.

#### TUBERCULOSIS



#### ABSTRACTS

Sponsored by Arkansas Tuberculosis Association

TUBERCULOSIS OF THE PERICARDIUM

A review of forty-four proved cases in a veteral

A review of forty-four proved cases in a veteran population shows that medical treatment of this relatively rare form of tuberculosis is often sufficient, but surgery may also be indicated. Early initiation of treatment is of utmost importance. Before the adoption of specific antituberculosis chemotherapy, tuberculous pericarditis carried a grave prognosis. Eighty to 90 per cent of those afflicted died in the acute phase, and many of the remainder subsequently died from constrictive pericarditis or from miliary tuberculosis.

For the study reported, the Veterans Administration in Washington, D.C., supplied a list of all veterans treated in its hospitals from 1952 through 1955 who had a clinical diagnosis of tuberculous pericarditis. The clinical records of 214 patients from all parts of the United States were collected and carefully reviewed. Forty-four cases had a positive culture or acid-fast bacilli seen in histological sections of the pericardial fluid or resected pericardium.

The average age at onset was 51 years, with a range of 20 to 66 years. Twenty-four patients were white, and 20 were Negro. However, since the ratio of whites to Negroes in the United States veteran population is 12:1, the disease was 10 times more prevalent among the Negro race.

Dyspnea on exertion or at rest was one of the earliest and most disabling symptoms. Less common and more gradual in development were ankle swelling and nonproductive cough. Chest pain, usually aggravated by deep inspiration, coughing or change in position, was variable in its nature, but rarely resembled angina. Generalized complaints of fatigue and anorexia were common.

Signs related to an elevation in venous pressure were also common. Pulse pressure was not significantly less than normal in the majority of cases,

JOHN H. HAGEMAN, M.D., NICHOLAS D. D'ESOPO, M.D., and WILLIAM W. L. GLENN, M.D., The New England Journal of Medicine, February 13, 1964.

but it was rare to find a value greater than 40mm. of mercury.

Electrocardiographic tracings exhibited lowered voltages and 'T' wave inversion and were of considerable aid in the diagnosis.

In 10 cases a right-sided cardiac catheterization had been done. The pressures and their tracings were "consistent with" constrictive pericarditis.

#### MEDICAL TREATMENT

In the group of 44 patients, 23 received medical treatment without subsequent operation. The medical regimens consisted of specific antituberculosis chemotherapy; pericardial paracentesis to obtain fluid for bacteriologic study and to relieve tamponade; and digitalization, diuresis, and a low-salt diet.

Streptomycin, para-aminosalicylic acid (PAS), and isoniazid were the only chemotherapeutic agents used. Duration of chemotherapy averaged eleven months for 11 patients who survived for five years and for 2 who died of unrelated causes. Early chemotherapy appears to be of paramount importance for a medical cure.

Eight patients died while receiving medical therapy. At the time of death all but 1 (who died two days after admission) were receiving antituberculosis chemotherapy. At autopsy all 8 had a thickened pericardium. Some of these pericardia were studded with caseous granulomas. The surfaces of the hearts appeared gray owing to a thickened epicardium.

Two patients probably died from the effect of cardiac tamponade. Another died of pulmonary edema after a bilateral thoracentesis, and one went into cardiac arrest after the paracentesis of both pleural cavities. Four others died as a result of chronic constrictive pericarditis.

#### SURGICAL TREATMENT

A pericardiectomy was performed in 21 patients after a period of medical treatment.

The indications for pericardiectomy were as follows: continued accumulation of a pericardial

effusion; thickened pericardium (demonstrated by injection of air into the pericardial sac); calcification of the pericardium; results of pericardial biopsy; progression from larger globular heart in the effusion stage to a smaller heart with continued high venous pressure; and moribund patient with severe cyanosis unobtainable blood pressure.

Thirteen patients have survived for five or more years after pericardiectomy. Two others are well after four and a half years. Another had a fatal gastrointestinal hemorrhage one year after pericardial resection.

Four patients died within thirty days of pericardiectomy, an operative mortality of 19 per cent.

The 11 patients who survived for five years or more have given no evidence of relapse or tuberculous pericarditis, nor has constrictive pericarditis supervened as a late sequela. This is one of the most important facts derived from this study: that early success of medical therapy results in control of the tuberculous infection, so far as control of infection can be assessed by an average follow-up period of seven and two-tenths years.

#### CONCLUSION

Several generalizations appear to be justified on the basis of this series. The early institution of chemotherapy increased the possibility of a favorable outcome of medical therapy.

The chronicity of pericarditis is the circumstance that most clearly calls for pericardiectomy. Pericardiectomy was superior to medical therapy alone in patients whose chemotherapy was begun late in their disease, as judged by symptomatology. Excellent results were achieved by pericardiectomy in 11 of 13 patients in whom symptoms of pericarditis had been present for more than six months before the pericardiectomy was carried out.

Treatment of tuberculous pericarditis should be started as promptly as possible with a regimen of two or more antituberculous drugs. The chemotherapeutic regimen should always include isoniazid. The total duration of chemotherapy should be at least two years under the most favorable circumstances, or longer, as indicated by tuberculous lesions in other organ systems if such lesions are present. However, tamponade severe enough to result in hepatomegaly, ascites or peripheral edema provides a clear indication for pericardiectomy. Pericardiectomy can safely be done through infected tissues under cover of antituberculosis therapy. Early success by both medical and surgical therapy may be counted on to give lasting control of infection; both modalities prevent constrictive pericarditis as a late sequela.



## Diagnosis of Lung Cancer by Examination of Sputum

K. F. W. Hinson (London SW) and S. W. A. Kuper Thorax 18:350 (Dec) 1963

The authors attempted to assess the usefulness of examining sputum samples in the diagnosis of lung cancer. All the sputum samples were from patients attending a chest hospital, so that lung or heart disease was nearly always present. Of the two pathologists, who each made two slide preparations of every sputum, one had had several years' experience in this type of examination, and the other had spent about two months familiarizing himself with sputum cytology. When present, white threads or blood-flecked streaks were se-

lected for examination. The 1,671 sputum samples examined were obtained from 541 patients. In 229 of these, carcinoma of the bronchus had been histologically or clinically established. Ten patients had some other pulmonary malignant disease, and 302 patients had diseases other than cancer. Both pathologists had similar degrees of success in finding tumor cells, and repeated examination revealed these cells in about two-thirds of patients with carcinoma of the bronchus. False positives were recorded in less than 3% of the samples, and in only one patient was a false positive result reported on more than one occasion. The usefulness and reliability of sputum examination in the diagnosis of lung cancer has been established, but trained observers are essential.

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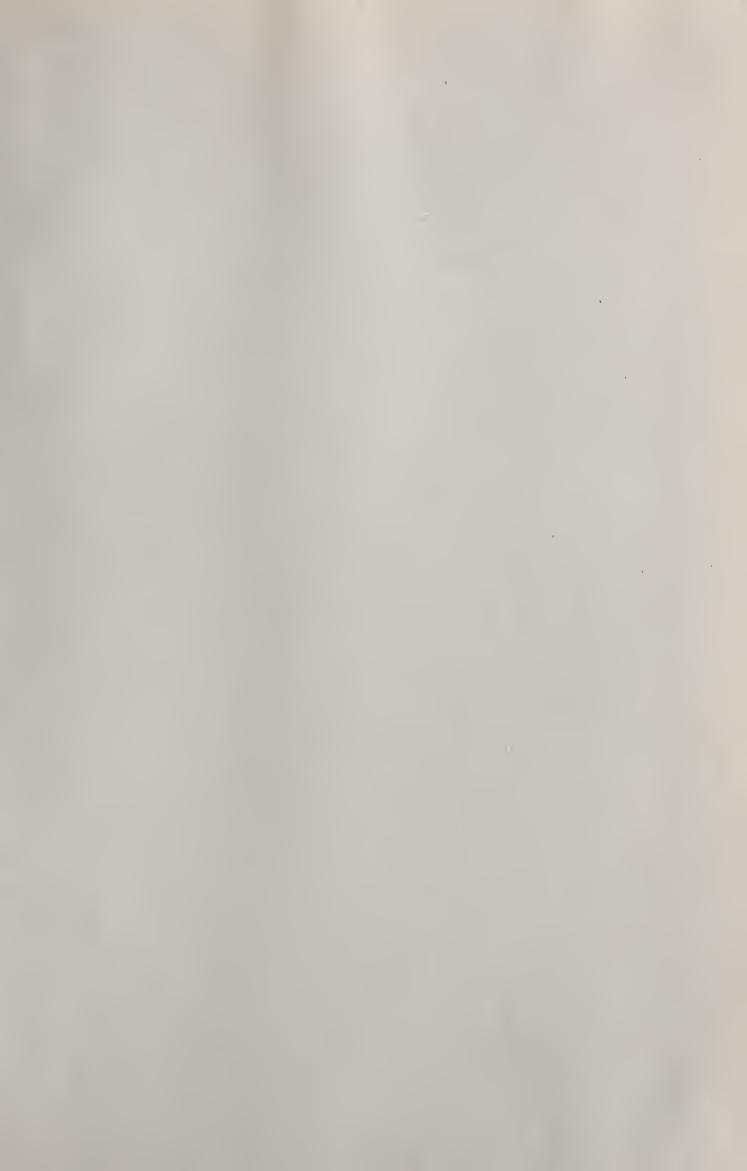
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